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How do  
you judge  
a whipping  
agent?

**JULY**  
**1954**



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For the crop year ending next September, dealers say, world production may lag 80,000 to 90,000 tons behind global consumption in 1953. That's calculated at 800,000 tons.

Whether cocoa use in 1954 will maintain last year's rate is a question it's still too early to answer.

... may some day

THIS CLIPPING from a recent issue of *The Wall Street Journal* capsules the story of cocoa's rising costs. To help manufacturers of chocolate products—coatings, confections, fondants, icings, baked goods, beverages, etc.—offset these increasing costs, the FRITZSCHE Flavor Research Laboratories have applied new technical advances to their already well established line of natural and imitation cocoa and chocolate fortifiers, with the result that these materials can now be used to effect savings of as much as 25% and more of the natural chocolate ordinarily used. To manufacturers in this or allied industries interested in sampling these very superior COCOA and CHOCOLATE INTENSIFIERS, we shall be happy to send working samples and suggestions for their proper use. Please address us on your letter-head, indicating the type of product for which you contemplate their use.

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# The Manufacturing Confectioner

Vol. XXXIV

July

No. 7

1954

Edited and Published in Chicago

The Candy Manufacturing Center of the World



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COVER: We thought that this was a particularly good photograph of a foam test. See page 13 for a discussion of whipping agent tests.

Founder—EARL R. ALLURED

Publisher—P. W. ALLURED Editor—STANLEY ALLURED

Eastern Manager—JAMES ALLURED Technical Editor—WESLEY CHILDS

Sales Manager—ALLEN ALLURED English Representative—M. G. READE

Publication Office  
418 N. Austin Blvd.  
Oak Park, Illinois

Eastern Office  
303 W. 42nd St.  
New York 36, N. Y.

London, England  
Prospect House  
Heath Street N.W.3

Published monthly except June when published semi-monthly by The Manufacturing Confectioner Publishing Company, publishers of The Manufacturing Confectioner—The Blue Book—The Candy Buyer's Directory. Executive offices: 418 No. Austin Blvd., Oak Park, Illinois. Telephone EUclid 6-5099. Eastern offices: 303 West 42nd Street, New York City 36, N. Y. Telephone Circle 6-6456. Publication Offices: 401 N. College, Indianapolis, Indiana. Copyright, 1954, Prudence W. Allured. All rights reserved. Subscription price: One year \$5.00. Two years, \$5.00. Per copy, 35¢. "Purchasing Executive Issue": \$2.00. In ordering change of address, give both old and new address. Entered as Second Class Matter at Indianapolis, Indiana, under the Act of March 3, 1897. Member: National Confectioner's Assn., Western Confectionery Salesmen's Assn., National Candy Wholesaler's Assn., Audit Bureau of Circulation, Associated Business Publications. Foreign subscriptions: One year, \$4.00. Two years, \$7.00. Canadian Subscriptions: Same as U. S.

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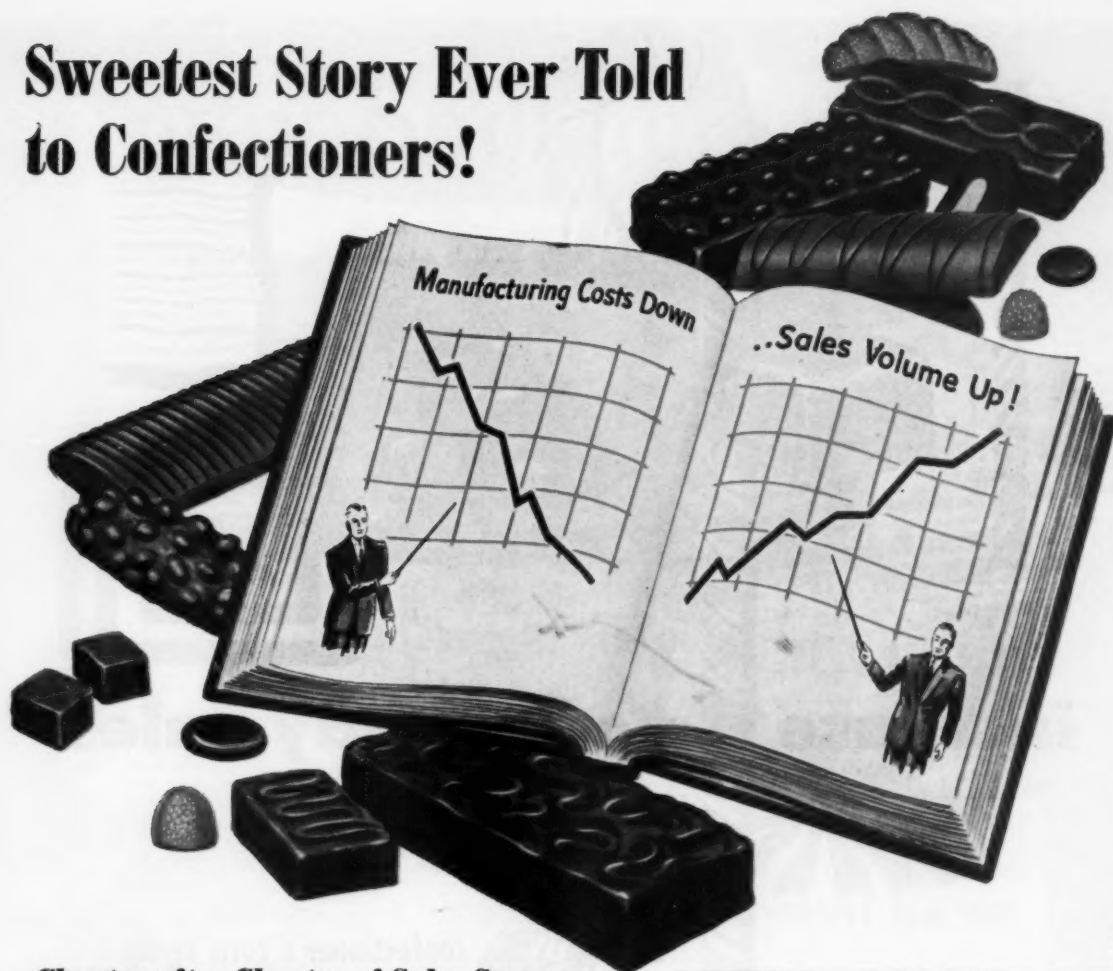
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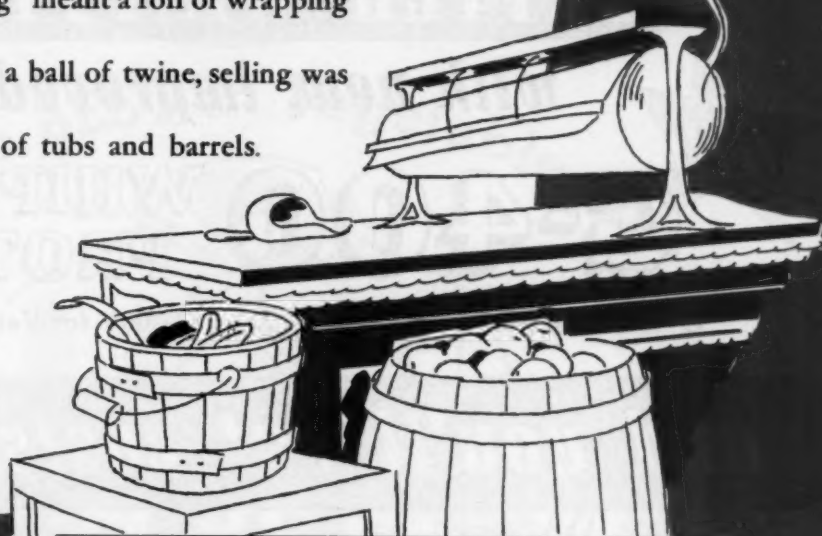
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# How Do You Judge a Whipping Agent?

by R. HENIKA, J. REGER AND H. TENQUIST  
*Research Laboratories, Western Condensing Company*

**Q**UICK foam tests commonly are used to predict performance of whipping agents in aerated foods. The whipping agent is beaten with a given amount of water for a set time and the foam height or density and weep are measured. This method is useful for comparing similar foaming agents such as egg albumens differing in brand, acidity or method of drying.

However, as many confectioners have discovered, some whipping agents which perform well in the foam test may not work well when actually used in certain aerated confections. This report illustrates this inconsistency as well as the opposite case—that a whipping agent may perform much better in actual use than would be predicted from a foam test. It also emphasizes that when combinations of whipping agents are to be used, they should be tested in actual formulas over a wide and closely graded range to obtain best results.

## *Procedure:*

Foams and aerated toppings were made with a high quality spray-dried egg albumen, a high quality stabilized soy albumen, and Dairy-Whip. Dairy-Whip is a new whipping product extracted from sweet cheddar whey. The protein contents of the egg, soy and Dairy-Whip were respectively 85, 60 and 8 per cent, dry basis.

In the quick foam test, the whipping agents were dissolved in water to give final concentrations from 0.5 to 16.0 per cent by weight. (This range included water-whipping agent concentrations equivalent to the 0.5 to 3.0 per cent total whipping agent found in marshmallow toppings, cremes and similar confections.) The solutions were whipped in a 5 quart Hobart mixer at high speed, using 1.0 minute for soy, 3.0 minutes for Dairy-Whip and 1.5 minutes for

egg. Previous tests had shown these to be optimum times for each product. Foam density was determined as an index of foaming power and stability (weep) was measured as the volume of water draining from the entire batch of foam in 20 minutes.

A marshmallow topping was chosen to compare the actual whipping properties of egg, soy and Dairy-Whip. Equal amounts of cane sugar and corn syrup solids in water were cooked to 238° F, cooled to 212° F and added to a foam of the whipping agent and water in a five gallon horizontal beater. Topping density was measured during 1 to 12 minutes of beating and one-half pint samples were withdrawn at lowest density. Weep, body and color were checked during storage for 30 days at room temperature, 99° F

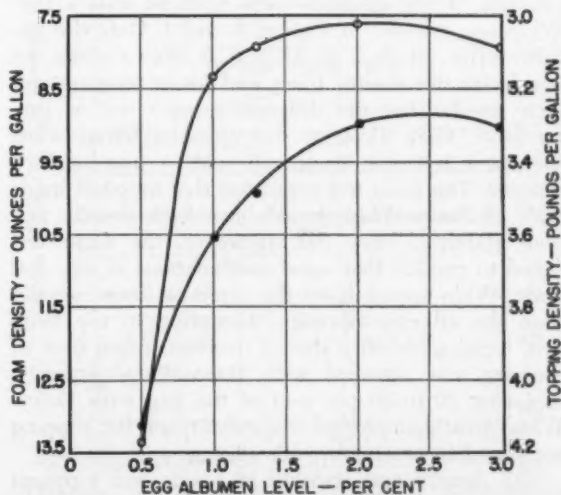


Figure 1 The effect of egg albumen level on the density of foams (°) and marshmallow toppings (•)

and 113° F. The final toppings contained 21-22 per cent moisture and 0.5 to 3.0 per cent whipping agent.

Foams and toppings were also made by removing varying amounts of egg albumen and adding Dairy-Whip or soy albumen. A third series was made with combinations of soy and Dairy-Whip. Dairy-Whip replaced egg albumen or soy albumen on a 2:1 basis; that is, two parts of Dairy-Whip were added for every part of egg or soy removed. Soy replaced egg on a 1:1 basis. To illustrate how these combinations were made, suppose a series was made with 10 parts of egg albumen serving as the all egg control. Then a 40 per cent replacement of egg with soy would be made with 4 parts of soy and 6 parts of egg. A 50 per cent replacement would have 5 parts of soy and 5 parts of egg. In a similar series with Dairy-Whip, a 40 per cent replacement would be made with 8 parts of Dairy-Whip and 6 parts of egg, a 50 per cent would have 10 parts of Dairy-Whip and 5 parts of egg, and so on.

#### Results:

Figure 1 shows that the pattern of foam density as affected by concentration of egg albumen in the quick foam test closely paralleled that in a marshmallow topping. Since a similar relation was found when foam and topping stabilities were compared, this illustrates a case where the foam test could be used to predict performance in a specific application.

Table 1 lists the actual values for the toppings which were graphed in Figure 1 and shows how closely the results were duplicated.

Table 1

Trial	Density of Toppings With Egg Levels of				
	3%	2%	1.3%	1%	0.5%
1	3.24	3.19	3.42	3.37	4.11
2	3.26	3.26	3.43	3.58	4.15
3	3.31	3.26	3.62	3.63	
4	3.32	3.28		3.65	
5	3.32	3.37		3.82	
6	3.41	3.42			
	3.31	3.30	3.49	3.61	4.13
	.06	.08	.11	.16	.03

Foam and topping results obtained when varying amounts of egg albumen were replaced with Dairy-Whip are graphed in Figures 2 and 4. Only the stability after 30 days at 113° F is shown since the trends for the shorter times and lower temperatures were similar but the differences were not as pronounced. They illustrate discrepancies found when the foam test was compared with a marshmallow topping. The foam test suggested that toppings made with all Dairy-Whip should have high density and poor stability. They did. However, the foam test failed to predict that some combinations of egg and Dairy-Whip would have the same or lower density than the all egg toppings. According to the foam test, topping stability should decrease when part of the egg was replaced with Dairy-Whip. Actually, replacing 20 to 50 per cent of the egg with Dairy-Whip greatly improved the stability of the topping compared to one made with all egg.

The density and stability of foams and toppings made with combinations of egg and Dairy-Whip, soy and Dairy-Whip, and egg and soy at the 1.3 per cent

level are shown in Figures 3 and 5. The weep for the toppings was taken at 7 days storage instead of 30 days as in Figure 4. The results of the egg-Dairy-Whip blends were similar to those obtained with the 1 and 2 per cent levels of egg. With soy-Dairy-Whip and soy-egg blends, the quick foam test suggested that the all soy toppings should have lower density than all Dairy-Whip or all egg but that combinations of soy with Dairy-Whip or egg should have the lowest density. The latter was not true when the toppings were made. The density increased as more Dairy-Whip or egg was used. The quick foam test also indicated that all soy toppings should have the best stability. In reality, the stability of the toppings made with 50 to 100 per cent soy was so poor that they did not hold up for 7 days storage at 113° F.

#### Discussion:

The use of a foam test to measure the value of a whipping agent in marshmallow toppings, cremes, mazettas, and the like has not received much attention in food journals. Therefore, when a new whipping agent is marketed, each food processor has to judge its properties himself. Since it costs time and money to test it on a plant scale, he relies on what past experience has taught him. He has found that he can estimate reasonably well what a sample of egg albumen will do in a sugar sirup by the way it whips in water.

The results of this work verify this test—as long as egg albumen is the sole whipping agent. But with different whipping products now available, a test of this kind can be misleading. For example, soy albumen can be used satisfactorily in high moisture meringues and low moisture nougat. The excellent foaming power and stability found in the quick foam test suggest that the foam test could be used to predict the value of soy in meringue and mazetta. Yet soy in this work made very poor marshmallow toppings. The topping had low density but the foam structure broke down, causing collapse of the topping and excessive weep in less than 7 days at 113°F. Thus the foam test could not be used to predict the behavior of soy in a topping.

The opposite effect was found with Dairy-Whip. Here the foam test suggested that while Dairy-Whip might lower topping density, it should increase the weep markedly. Actually, combinations of egg and Dairy-Whip lowered the weep of the toppings materially. The color of the toppings with Dairy-Whip was as white or whiter than the all egg toppings during the 30 days storage test. The flavor of the Dairy-Whip-egg combinations was judged to be superior to that of the all egg topping. These properties, valuable to the food processor, could not have been predicted from judging Dairy-Whip by a quick foam test.

Thus it seems that new whipping agents should be judged by their performance in actual applications rather than by a quick foam test. This is especially true when combinations of whipping products are to be used.

—the end

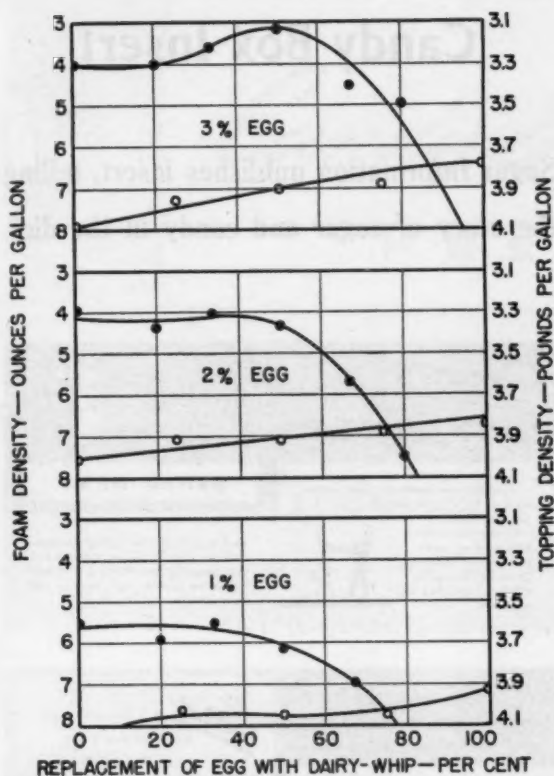


Figure 2 The density of foams (°) and marshmallow toppings (•) made by replacing egg albumen with Dairy-Whip

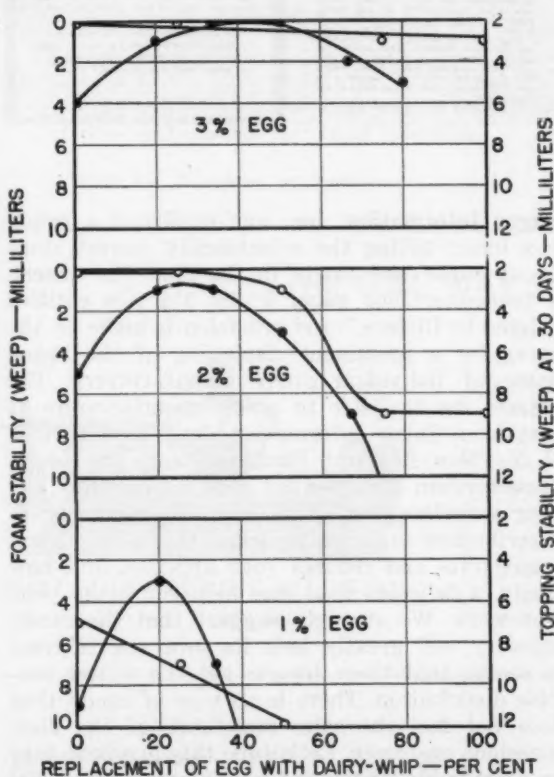


Figure 4 The stability (weep) of foams (°) and toppings stored 30 days at 113°F. (•) made by replacing egg albumen with Dairy-Whip

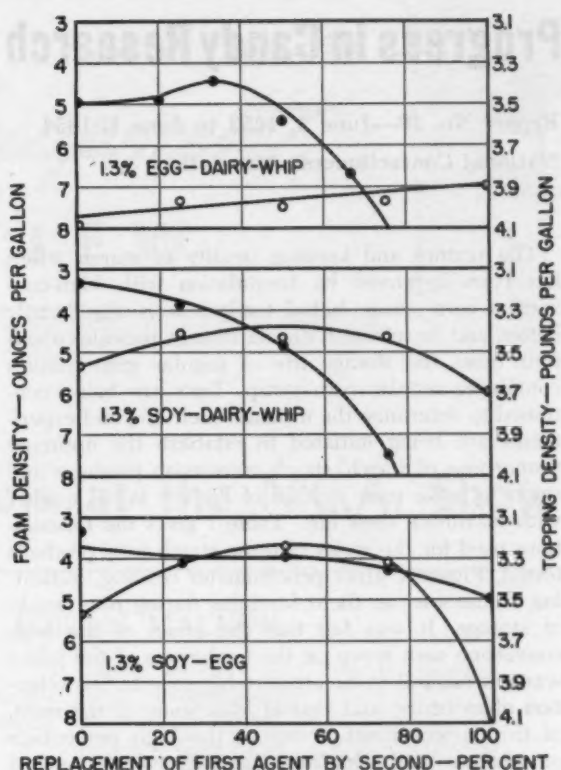


Figure 3 The density of foams (°) and marshmallow toppings (•) made with combinations of egg albumen, soy albumen and Dairy-Whip

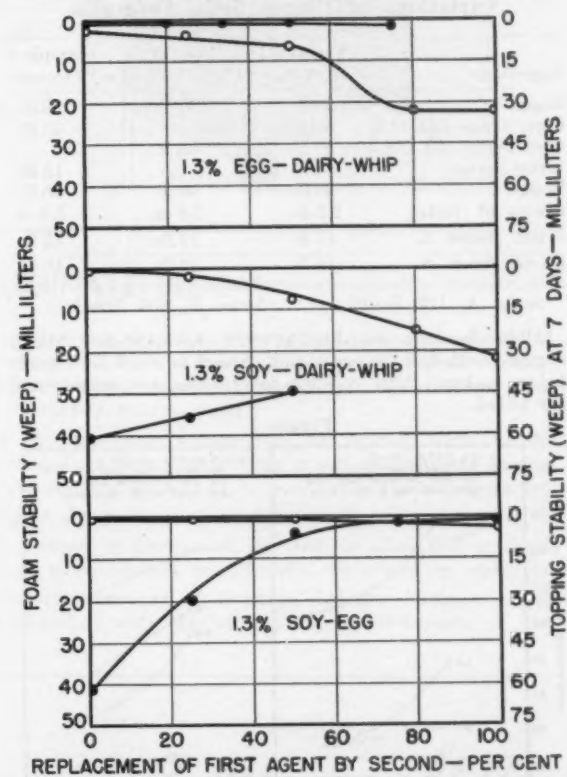


Figure 5 The stability (weep) of foams (°) and toppings stored 7 days at 113°F. (•) made with combinations of egg albumen, soy albumen and Dairy-Whip



# Progress in Candy Research

Report No. 28—June 1, 1953 to June 1, 1954  
National Confectioners' Association

The texture and keeping quality of starch jellies has been improved by formulation with high-conversion corn syrup. Initial tenderness is significantly better, and its retention during storage provides about four times the storage life of regular gum candies containing regular corn syrup. Tests are being continued to determine the ultimate shelf life, and experiments are being initiated to establish the optimum proportions of starch, starch conversion products and sugar to make gum candies of highest initial quality with maximum shelf life. Table I gives the formulations used for the series of three starch jelly products tested. Figure I gives penetrometer reading, indicating tenderness, on these formulas during nine weeks of storage. It was felt that the effect of the high conversion corn syrup on the tenderness of the jellies was too marked to be attributable only to the retention of moisture, and that at least some, if not most, of this improvement is due to the high percentage of Maltose and Dextrose against the amount of Dextrins.

**Table I**  
**Variations of Starch Jelly Formulas**

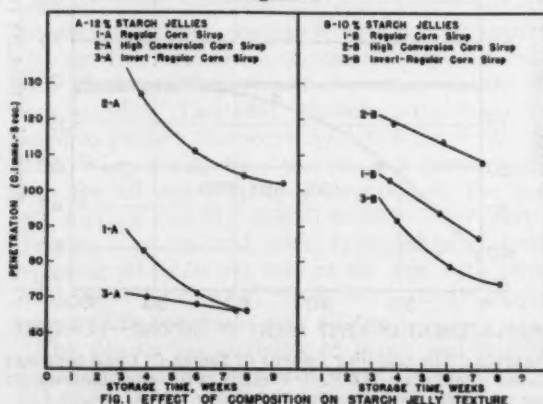
Ingredient	Formula 1 (Regular)	Formula 2 (High Conversion)	Formula 3 (Invert)
Sugar	50 lb.	40 lb.	40 lb.
Corn Syrup (42 D.E.)	50 lb.	.....	45 lb.
Corn Syrup (63 D.E.)	50 lb.	60 lb.	.....
Invert Syrup	.....	.....	15 lb.
Water	96 lb.	96 lb.	96 lb.
Cream of Tartar	2.3 oz.	2.3 oz.	2.3 oz.
Starch, Series A	12 lb.	12 lb.	12 lb.
Starch, Series B	10 lb.	10 lb.	10 lb.

Series A, 12% Starch.

Series B, 10% Starch.

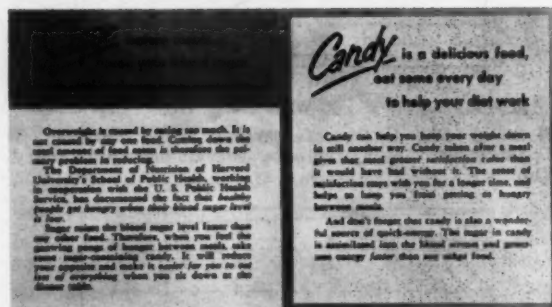
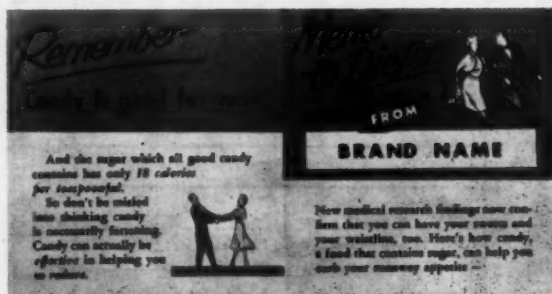
All batches were cooked to 78% solids (refractometer). Starch is mixed with half the water and allowed to stand 30 minutes before cooking. After cooking, flavor, color, and tartaric acid are added.

**Figure I**



# Candy Box Insert

Sugar Information publishes insert, telling the story of sugar and candy in the diet.



Sugar Information, Inc. has published a candy box insert telling the scientifically correct story about sugar and candy in the diet. The insert, a two-color, four page, 3" by 3 1/4", is entitled "Memo to Dieters," and provision is made on the cover for a prominent displaying of the brand name of individual candy manufacturers. The inserts are available to candy manufacturers at cost from Sugar Information, Inc., New York 5, N. Y. "New Research Findings," says the insert, "now confirm that you can have your sweets and your waistline, too." The insert then goes on to describe how sugar before meals raises your blood sugar level and reduces your appetite, and how candy, a delicious food, can help you make your diet work. We strongly suggest that the candy industry will greatly help its own self interest in seeing that these inserts get the widest possible distribution. There is no type of candy that does not feel the sales resistance of the diet-conscious customer. Let's turn this handicap into an asset by using this industry's unparalleled distribution to spread this information throughout the country to all consumers.



July, 1954



# *Candy Equipment*

## PREVIEW



## You Saw These Modern Production Tools at the N.C.A. Show

### THE RASCH UNIVERSAL FOILING MACHINE

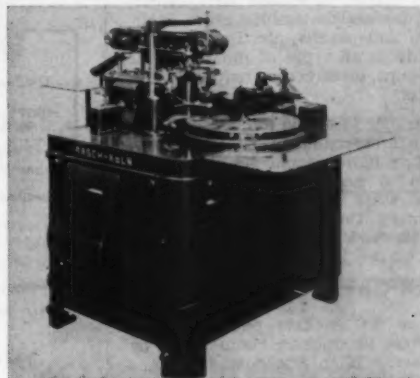
All standard shapes—such as cherries, half eggs, bars, mints—are neatly and beautifully wrapped on the Rasch Universal Wrapper.

Unusual shapes such as whole eggs or balls require a rolling device.

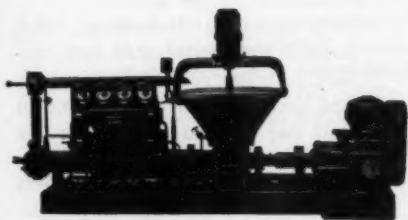
Other tools for specialties are available such as banding, side-folding, etc.

Engineered for long service life with hardened steel parts, ball bearings, and one-shot centralized lubrication.

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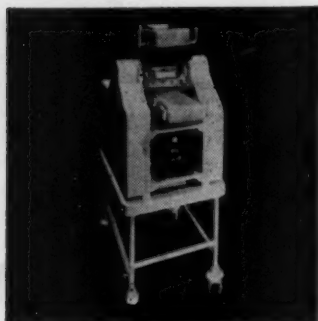
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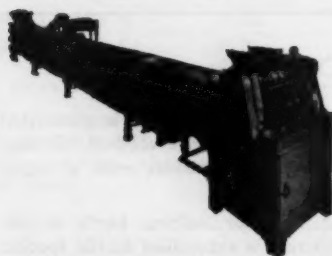


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This machine produces large pops with a minimum of weight and can form suckers as thin as  $\frac{1}{4}$ " with proper stick coverage. Using wood or paper sticks without additional attachments, the continuous plunger action inserts the stick in the center of the lolly pop.

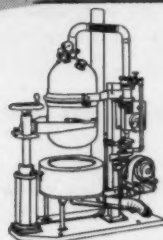
Equipped with variable speed control, electric motor and easily changed rolls, the Racine High Speed Plunger Action Sucker Machine (Model EP) does not require experienced help for high production.

Additional data on this machine can be obtained from Racine Confectioners' Machinery Co. 15 Park Row, New York 38, N. Y.

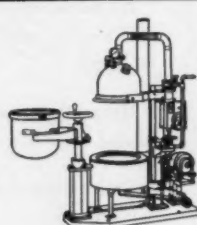
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## **CASE 1102\*.. Solutions to BELT Problems** from the files of VOSS BELTING & SPECIALTY CO.

### **THE PROBLEM..**

A prominent Mid-Western manufacturer of candy bars was getting very unsatisfactory bottoms on his product—bottoms that were dingy, dull and

unattractive. For some time, he attributed the persistence of this condition to a change in formula which he had recently made, which involved the use of compound coating.

### **THE SOLUTION..**

The manufacturer called in VOSS, and asked our opinion of the cause of the trouble, and how it might be eliminated. At our suggestion, he replaced his Enrober Belt with a VOSS KLEER-

GLOSS, of the same type which we have installed in so many candy plants and which are uniformly giving such satisfaction from the standpoint of performance and appearance of finished product.

### **THE OUTCOME..**

It immediately became obvious that the compound coating which the bar manufacturer was using was *not* basically responsible for his difficulties. As soon as production started with the VOSS HI-GLOSS Belt, the dingy and unappetizing appearance of the bar bottoms cleared up, and, in fact, the bars looked better than they had ever done in the past. After several months of

constant use, the VOSS Belt is still in excellent condition, without any evidence of curling or cracking; it is as easy to keep perfectly clean as when it was installed; and the candy continues to come through with glossy, eye-appealing bottoms.

\*

*This is a strictly factual report. Name of plant involved is available on request.*

VOSS files are full of cases where *Hi-Gloss, Hi-Lustre, Double-Texture* or other well-designed and carefully made VOSS Belts have solved troublesome and expensive problems for candy manufacturers, large and small, throughout the country. VOSS Belts are made specifically for candy plant requirements. They resist cracking and curling, produce goods of fine appearance, make cleaning easy and sanitation sure, and have long production life.

As specialists in this field, we are constantly testing—and often rejecting—new developments in films and fabrics which promise Belt improvements; when we do incorporate new features in our Belts, they are thoroughly tested for all critical factors before being marketed. (Look for an announcement soon of such a tested improvement, designed to give longer Belt life while maintaining first class production in every other respect).

Meanwhile, phone or write our nearest office for immediate attention to any Belt problems you may have, whatever their nature.

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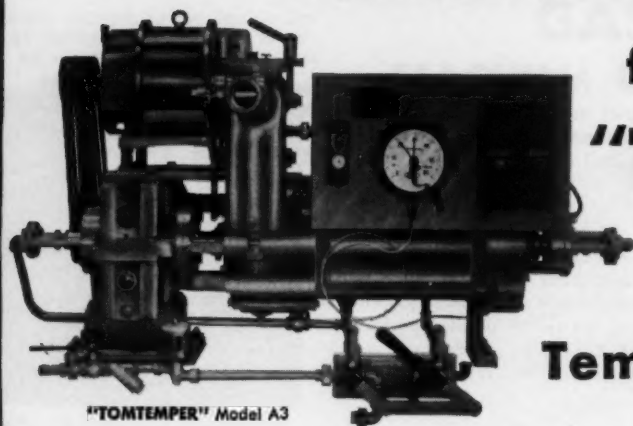
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"TOMTEMPER" Model A3

# fully automatic "Tomtemper" Chocolate Tempering Machine

**It Guarantees More Attractive Finish - Finer Fracture - Better Taste**

**JUST LOOK WHAT THE "Tomtemper" OFFERS:**

**FULLY AUTOMATIC OPERATION** Easy to operate. Requires only one adjustment.

**MINIMUM PROCESSING TIME** Combines undercooling with intense mechanical mixing to achieve ideal tempering cycle at lowest possible viscosity.

**FAST START UP** Delivers correctly tempered chocolate less than 4 minutes after starting.

**FAST CHANGEOVER** Switches from one type of chocolate to another in 3 to 5 minutes.

**HIGH OUTPUT** Up to 3600 pounds of chocolate per hour; 5000 pounds per hour with accessory cooling.

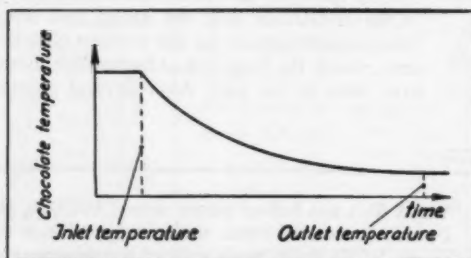
**SMALL SIZE** Measures approximately 47" x 22" x 20".

**ABSOLUTELY HOMOGENEOUS TEMPERING** Exposes every particle of chocolate to same tempering treatment.

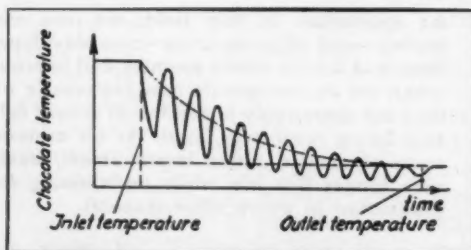
**GUARANTEED ACCURACY** within  $\pm .9^\circ\text{F}$  of desired temp.

And these are but a few of the many outstanding features offered by the "Tomtemper."

"TOMTEMPER" Thin-Film Tempering Machines are manufactured by TOM'S Laboratory LTD. which also manufactures a line of Fancy Molding Plants and Chocolate Chip Making Machines.



**AVERAGE TEMPERATURE** of chocolate as it progresses through the "Tomtemper" is shown above.



**UNDERCOOLING AND MIXING** Graph above shows how "Tomtemper" achieves the outlet temperature by undercooling and mixing.

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*This paper, and the three that follow, were presented at the Pennsylvania Production Conference last April. They provide the most complete review we have seen regarding the cost, methods and equipment for handling sugar in bulk.*

## The Bulk Sugar Picture - a Resume

by EDWARD W. MEEKER, Manager, Manufacturers & Consumers Service Division  
The American Sugar Refining Company

**B**Y BULK sugar we simply mean dry, refined, granulated cane or beet sugar, without bag or other packaging, that is delivered, stored and handled by progressive and modern material handling methods in quantities markedly larger than the usual 100 lb. bag.

Bulk handling of refined granulated cane and beet sugar is not new and has been used in the United States for a number of years—first in the East and later in the West. While its expansion has been relatively slow, the amount of sugar being moved and handled in bulk is increasing with each year as new means of transportation, storage facilities and handling equipment are developed. Further, and perhaps more importantly, the significant economies resulting from the use of bulk sugar both in the selling price as compared to bag sugar and the in-plant savings are arousing more than passing interest in this means of handling sugar. As a consequence, standard bulk services are now being afforded by more and more refiners for sugar delivered in bin trucks, rail cars or portable bin containers. It might not be too optimistic to forecast that within the next ten years all major users, who have a consistent and substantial usage of sugar throughout the year, will have adopted the use of bulk sugar.

### Development of Bulk Handling

The development of the transportation and handling of sugar in bulk arose through the search for more economical and efficient methods of handling sugar by food processing industries. Furthermore, three other important factors are today causing food plant operators to consider overhauling their present

systems for handling sugar. These are:

1. Greater emphasis on food plant sanitation.
2. Employee resistance to handling heavy loads.
3. The need to keep sugar losses at a minimum.

Almost every plant using bagged sugar is faced with a materials handling problem, the seriousness of which is dependent upon the individual plant. Materials handling is a high-sounding term for something that goes on in every plant all the time—the picking up and moving of things. It applies to the movement of raw materials, materials in process and finished products. It applies to both manual and mechanized operations. Thus, every operation that involves raising, lowering or moving, is materials handling. Because materials handling is something that goes on all the time in every plant, it is often hard to realize how important an element it is in the cost of the operation and how it affects both production and sales. In some plants, as reported in the booklet "Improving Materials Handling in Small Plants" published by the Small Defense Plants Administration, Washington, D. C., materials handling accounts for as much as 50% of the manufacturing cost. Poor materials handling is expensive any way you look at it. It may be responsible for a great deal of production damage. It may be a prime cause of production delays. A poor materials handling system also has its effect on employee morale. In brief, materials handling is important in almost every phase of your plant operations because it affects almost every facet of your costs. Handling sugar in bulk will permit you to minimize, or even eliminate, these unnecessary and often unwarranted expenses.

## The advantages

The prospective bulk sugar user naturally wants to know what monetary savings are forthcoming, as one of the main purposes of handling sugar in bulk is to afford dollars and cents economies. He also wants to know what equipment is available and necessary to handle the sugar efficiently and economically. However, as each prospective user has his own particular circumstances, both from a financial and equipment standpoint, and as each manufacturing plant will have its own special problems, a satisfactory estimate of the economies to be gained can only be arrived at through close collaboration of the plant management with their own engineering department in conjunction with outside engineering, supply or machinery firms. Therefore, an analysis of any plant system must include a careful study of the cost of operation. This study should be made coldly and objectively, in light of known facts rather than hoped-for results.

The advantages of handling and receiving dry granulated sugar in bulk are, of course, mainly through elimination of the usual labor necessary to unload, store and transport the small 100 lb. unit bagged sugar from storage to process, handling and storage of the empty bags, and disposal of the empty bags—if they possess any significant salvage value. Moreover, bulk sugar often saves storage space which may enable a customer to carry larger sugar inventories in a given space. For example, bag sugar is often stacked only about 6 bags high because piling and unpling above that height is difficult without costly and/or special equipment and labor. Bulk sugar storage bins can be constructed to almost completely fill the storage space available or they can be put in suitable locations outside of the plant thus making available additional space inside the plant for other purposes.

Furthermore, and this is apparently becoming increasingly more important, it eliminates personal hazards to employees, such as fatigue, injuries from strains and other accidents commonly caused by handling heavy loads—all of which influence efficient operation and employee morale.

Don't overlook the self-satisfaction gain of pride in operating a plant that is beyond reproach from a sanitation viewpoint, which is directly reflected in the consumers' trust in your products. Bulk sugar being handled in essentially a closed system eliminates possible or potential contamination and insures cleanliness of operation.

Finally, a bulk sugar handling system will cut your sugar losses to a minimum since there can be no breakage, spillage, pilferage, etc.

## Prospective Cost Saving

What are the most important factors to be considered that will assist you in arriving at a realistic and reasonable decision that bulk sugar will be economical for your plant? These are (a) the annual consumption, (b) the net saving per 100 lbs. which is made up of the difference in selling price between

bulk and bagged sugar, the in-plant savings (this may be as high as ten or more cents per 100 pounds), returns from bag resale—if any, maintenance, depreciation, etc., and (c) the relation of (a) and (b) to the cost of the installation and a reasonable pay-off time.

While in the case of the larger users bulk sugar will generally be economical and advantageous, it must be recognized that, today, it seems that the smaller manufacturer might be left out of the bulk handling picture because it will probably cost him too much to install the equipment and his pay-off time will be too long—which seems to be pretty much the case. For example, let us assume the manufacturer uses about 15,000 bags of sugar per year and he has an over-all net saving of approximately thirty cents per 100 lbs. (considered a conservative figure). If the cost of his installation is in the order of \$20,000 (not an unreasonable figure), it would take about four and a half years to amortize this cost. However, if the cost of the installation were in the order of \$30,000, the pay-off period would be extended to over six years, which is much too long. Since many people consider pay-off times that extend longer than three years to be excessive, the same customer would have to use about 35,000 bags or more per year to bring his pay-off period within the three years or less, which would be considered a very reasonable risk. Thus, it is apparent that the relatively small user simply cannot justify handling his sugar by bulk means, at least for the present, unless his installation costs are relatively low. Furthermore, it is obvious that a bulk sugar system will be more advantageous in plants where the sugar is used at relatively few points otherwise equipment and installation costs will be excessive. This applies to large users also.

## Transportation Equipment

There are three general types of shipping equipment presently used to transport bulk sugar from the refinery to the customer's plant. These are bin trucks, rail cars, and portable unit containers. Where the customer is within economical trucking distance of the refinery, the sugar is ordinarily delivered in specially constructed, trailer-type, insulated, stainless steel, sealed bin or hopper-type trucks of about 22,000 lbs. capacity. The bin-type trucks are customarily discharged by up-ending the bin body by means of hydraulic lifting equipment or, in some cases, they may be discharged by means of a screw conveyor located within the body of the truck. Hopper-type trucks are usually discharged by simple gravity flow through the discharge ports in the bottom of the truck hoppers. These types of trucks have been used more on the Pacific than on the East Coast. Bin and hopper-type trucks can also be discharged by pneumatic (vacuum or pressure) handling systems but specially constructed trucks are usually necessary.

Delivery to more distant points is usually made, at present, by hopper-type railroad cars of 80-100,000 lbs. capacity, specifically designed for the transportation of dry bulk materials. The cars are completely

sealed against the entry of dirt, dust, and leakage of sugar and are usually insulated to prevent sweating and/or potential caking of the sugar while in transit. The cars may be lined with plywood or tempered Masonite or, where linings are not used, the inner surfaces of the car may be protected by a non-toxic protective paint or even simply by the use of a "penetrating" wax. They are equipped with sloping ends and may be divided to form two or three hoppers to facilitate discharge. The cars are customarily emptied by gravity flow through the hopper outlets located on the bottom of the car. Transfer of the sugar from the bottom car discharge outlets or top filling ports can also be readily accomplished by means of pneumatic equipment.

For those manufacturers who for some reason are unable to receive and/or handle bulk sugar by bin truck or rail car, deliveries can be made in special hermetically sealed, portable bins that are carried by ordinary flat bed trailer trucks. The bins are readily handled by fork-lift trucks. Nesting and/or collapsible canvas lined or, more recently, paper-lined types of bins built on a pallet base are also known to be available and claimed to be satisfactory for sugar, although they are not, as far as the author is aware, in use for sugar at the present time in the East.

Transfer of the sugar from the delivery unit to the manufacturer's storage bins and/or use points is dependent entirely upon the physical limitations of the plant. The equipment and facilities that can be used for the most efficient and economical operation will depend upon the type of system desired, that is, mechanical, pneumatic, portable bin, or any combination of these.

The combinations and types of equipment that can be used to move the sugar from storage to process points are almost limitless. Those that have been used and approved by commercial use are screw conveyors (scrolls), belt conveyors, drag chain and drag flight conveyors, mass or bulk flow conveyors and elevators, bucket elevators (belt or chain types), vibrating or oscillating conveyors, overhead traveling lorries, portable bins and pneumatic (vacuum or pressure) systems.

### In-plant Equipment

The choice of a mechanical, air conveying, or portable bin handling system is dependent upon the requirements and desires of the user. For example, many want the original crystal size of the sugar to remain intact; others are not concerned if some particle size reduction results with the concomitant formation of some sugar "dust." If it is desired to retain the original grain size of the sugar, conveying belts, screw conveyors, and bucket elevators or portable unit containers are commonly used. Drag conveyors and similar systems tend to have a slight abrasive action on the sugar reducing the particle size slightly. Air conveying systems will reduce the particle size somewhat by attrition in passing through the system. However, the magnitude of the reduction is depend-

ent upon the design of the system. The sugar "dust" that is formed in air systems, if not wanted in the sugar, must be removed by suitable separators and collectors. Where the sugar is to be pulverized, any of the above systems are applicable since the presence of any preformed sugar "dust" is not of significance.

### Storage and Handling Precautions

The precautions that should be taken in the storage of bulk sugar—exclusive of portable bins—are few in number but they are considered important. One of the best means of preventing the sugar from caking is to keep it in motion. Schedules of delivery should be so arranged that the sugar is not stored, without movement, for periods of longer than one or two weeks. Arrangements should be provided to turn the sugar over if longer storage periods are contemplated or can be enforced through mischance or mishap. Protection of the storage bins and/or conveying equipment located outside the building, by insulation or other means, such as shelters equipped with heating units to minimize temperature changes, is usually the next most important precaution. The ideal storage conditions for bulk granulated sugar, of course, would be those applying to bag sugar. These are a temperature of not over 100° F. with a relative humidity not exceeding 60%. However, while a rather wide range of temperature and humidity is indicated, it is, of course, most desirable to maintain the storage conditions at a relatively *uniform* temperature and humidity as marked fluctuations should be avoided for the most satisfactory storage. Adequate protection against chance or careless contamination by dust, dirt or extraneous materials should be assured. Obviously, in exposed, outside equipment serious attention should be paid to making the system watertight. All outflow surfaces of storage bins should be constructed with angles greater than the angle of repose of sugar to prevent possible 'hang-up' of sugar with potential danger of subsequent caking. It is recommended that the outflow surface angle not be less than 50° from the horizontal. Adequate, common sense, efficient sanitation practices throughout at all times are prime requisites. Careful inspections should be made at periodic intervals and, when necessary, the system thoroughly cleared out.

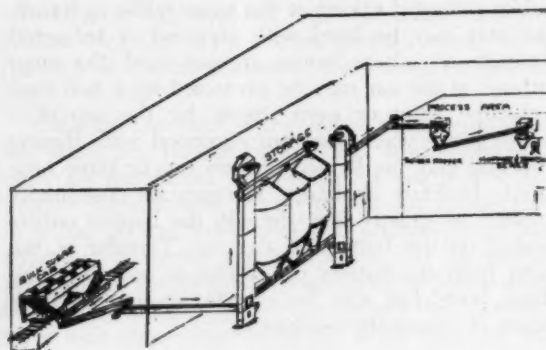
In closing, it is hoped that this brief introductory resume has drawn your attention to certain of the more important points of the bulk sugar picture. We also hope that it will arouse your interest and urge you to explore its possibility for your plant. The almost limitless flexibility of bulk handling of sugar affords you a potent tool to make your operations more efficient, increase sanitation, raise employee morale,—and save you money. Foresight in studying your particular sugar handling problem may mean extra profits for you. Hindsight in regretting your competitors gaining an advantage over you may be too late. Remember—you cannot afford to ignore change and you only exist if you simply adjust to it—but to excel, one cultivates and adopts it.

—the end





A bin truck of about 22,000 pounds capacity dumps its load of sugar into a receiving scroll which moves it into bin storage in this food plant in Massachusetts.



**BULK SUGAR SYSTEM**

Layout of a bulk sugar installation, showing the hopper car, storage bins, surge hopper and hopper and batch scale. Mechanical handling is used throughout this system.

## Mechanical Handling of Bulk Sugar

by JOHN F. BERTUCCIO

*Sales Manager, J. C. Corrigan Co., Inc.*

**T**HERE is a general trend toward some method of handling sugar in bulk due to the resulting economies. Over the past three or four years, we have developed and installed some very interesting in-plant sugar handling systems that are working satisfactorily. The standard type bulk cars which we have converted and made suitable for the transportation of sugar have been in service for almost a year and a half and the owners are well pleased with the results.

The in-plant system for the mechanical handling and storage of bulk sugar affords many advantages and will save you considerable money each year. The equipment would be definitely designed or tailored to fit your plant conditions.

A typical system is a completely progressive method of handling dry granulated sugar from truck or railroad car to process, starting with the dumping of the sugar into a hopper located outside the building for truck deliveries, or, in the case of rail deliveries, the

sugar is discharged through unloading port holes in the bottom of the car, into corresponding openings in a concrete pit between the railroad tracks at the plant siding. The pit has a watertight cover that keeps any surface water from getting down into it.

If your plant is situated within trucking distance of the refinery, delivery of sugar would be made in trucks designed for the specific purpose of transporting bulk dry sugar. Capacity of the truck ranges from 20,000 to 30,000 lbs. Unloading is made in approximately one hour. For plants located beyond the trucking limits, rail shipments are now possible. In outward appearance, the car resembles the standard railroad hopper car. It is fully lined and insulated to prevent caking of sugar in cold weather. The car has a capacity of 100,000 pounds and is loaded mechanically at the refinery through port holes in the top of the car. When loading is completed these openings are hermetically sealed. Unloading time on rail car



deliveries has been reduced from 18 hours to 2 hours. The total capacity of the mechanical unloaders is 30 tons per hour. When the car is positioned over the pit, a special canvas sleeve is used to connect each outlet on the bottom of the car with the inlets of the track pit. The hookup of this connection is the only man power required during the unloading of the car and the flow of sugar to storage.

As sugar is received into system, either from truck or railroad car, it is moved by means of feeder scroll to a cross scroll that delivers the sugar to the bucket elevator. The receiving scroll and bucket elevator have a capacity of approximately 30 tons per hour when continuously and regularly fed. The bucket elevator elevates the sugar and delivers it to a longitudinal scroll over the storage bin and fills the bin. The storage bin is made up of a series of hoppers, size and capacity depending on building conditions and sugar storage desired. When the sugar bin is full a high level indicator shuts down the feed automatically.

A typical bin with a capacity of 110,000 lbs. consists of seven hoppers or sections, bolted together, 10 feet high and 8 feet wide, overall length 56 feet. The interior surface of the bin is sand blasted and cleaned to remove loose scale.

Following this, the bin receives an application of three coats of Tropolite, one prime coat and two finish coats. The bins with a 55° pitch to the opening at the bottom of the hopper are flanged to receive a reclaim scroll.

From under the bin this reclaim scroll moves the sugar back to the elevator when reclaiming sugar from the bin. The sugar is then elevated and delivered to cross scrolls that carry it to processing units. This reclaim scroll moves the sugar from the bin at the rate required for processing.

The system is constructed of black steel or stainless steel and gives years of troubled free service. While arranged in a compact manner, it is so designed as to permit easy access for inspection and cleaning. Our experience indicates that very little maintenance is required.

In my description of the workings of the system for the mechanical handling and storage of bulk dry sugar, you no doubt can see that it offers many advantages over the handling of sugar in bags.

I will outline a few of these advantages for you:

1. Extra space for manufacturing purposes is made available by the concentration of storage into less floor space while at the same time the facilities for the storage of sugar are increased.
2. In-plant traffic is reduced and maintenance costs on floors are lowered.
3. Good housekeeping is improved and a neater plant is more easily maintained when there is no spillage of sugar or sugar dust to settle throughout the plant.
4. The problem of sanitation is simplified while at the same time higher sanitary standards are acquired.
5. The possibility of contamination is eliminated as all equipment is enclosed and dust tight. This protects the sugar from dust and dirt since it is untouched by human hands.
6. When sugar is shipped in bulk, the freight paid covers 100% usable sugar so there is a saving of freight on the bags.
7. The loss of sugar that remains in empty bags and the time saved in the salvaging of these bags constitutes a savings.

From your experience in handling sugar, I am sure you realize how the handling and storage of bulk sugar through mechanical equipment can react on your operating costs, since this phase of manufacturing is regarded as one of the major costs in production. We have been told that the savings in these labor costs alone have been sufficient to pay for the equipment in less than two years and at the same time improve in-plant conditions.

The intangible assets should not be overlooked. These can be measured by improved employee morale. The tiresome, laborious operation that accompanies the handling of bagged sugar and the exhaustion and fatigue due to heavy lifting has been removed. Injuries due to strain and other accidents all of which interfere with the efficient functioning of employee have been minimized. As a summary of the advantages of the mechanical handling of bulk sugar, we consider important:

1. Simplicity of design and ease of operation.
2. Flexibility in installation.
3. Protection of sugar from refinery to process.
4. Economy of operation.
5. Low maintenance costs.
6. Moderately priced initial cost of equipment.
7. Amortization possible through savings.

Good advanced planning will save money as changes on paper are not nearly as costly as those made in the building. Whether your plant is on one floor or on several floors, whether the building is new or old with obstructing beams and supports, we recommend that a complete survey be made so that a system may be designed largely governed by the physical structure of the building and making the most effective use of the space available.

Every precaution should be taken to provide a smooth mechanized flow of sugar through receiving, storage and processing. Excessive moisture conditions and variations of temperature should be noted as they have considerable bearing on smooth flow. If you are planning a new plant it is well to consider your equipment as a tie-in with construction.

As to estimating the approximate cost of a mechanical system, this would depend upon the amount of storage required and the equipment necessary to deliver sugar to process. This cost would vary from \$20.00 to \$40.00 per bag stored.

From our experience we have found it will be to your advantage to investigate the possibilities that exist in your plant to reduce production costs through the handling of sugar in bulk by mechanical means.

-the end

# Bulk Sugar in Unit Containers

by EDWARD A. PAGELS

*Eastern Division Sales Office, Tote System, Inc.*

**N**OT long ago a leading firm of Market Analysts made the prediction that, as a result of their nation wide surveys, it was their considered opinion that the two greatest growth industries in the United States over the next ten years would be petrochemicals and materials handling.

It logically follows that handling materials in bulk, either in unit containers, storage bins, silos, bulk trucks or bulk railroad cars, will have a corresponding development over the next ten years.

An executive of one of the largest bakery chains is quoted as saying that he believed the last frontier where the baking industry could reduce production costs would be in savings through bulk materials handling.

It is believed that most of us will agree that it is economically unsound to continue the shipment of sugar in 100 pound bags to users whose unit of purchase and even thinking is in truckload and carload quantities. Most of us will concede that a substantial cost of the finished product is comprised of the cost of bags; losses through breakage; and labor in receiv-

ing, warehousing, and discharging bags into production processes.

Assuming these statements to be true the manufacturer is faced with two basic decisions; the first is at which point is the volume sufficient to justify tooling up for bulk handling; and the second is choosing the method of bulk handling between unit containers and fixed storage bins.

It is my intention here to give you some rules of thumb to help you analyze your problem. There are of course always exceptional circumstances in certain cases so these rules of thumb are not held out to be more than a guide.

A conservative estimate of the savings to be derived through receiving sugar in bulk compared to bags is about \$0.30 per Cwt. This is made up of \$0.20 reduction in purchase cost of sugar, \$0.06 in labor savings and \$0.04 in product loss.

Ordinarily a capital investment is not attractive to management unless it is self liquidating within three years; therefore, we develop an equation of three years volume times savings being equal to or less than the capital investment required.

From my own experience over a period of years based on engineering and cost surveys made in innumerable sugar using plants I have come to the following conclusions in regard to the volume necessary to warrant a bulk sugar installation:

0 to 12,000 Cwts. per year—Insufficient.  
12,000 to 20,000 Cwts. per year—Marginal—Barely within 3 year write off.  
20,000 to 30,000 Cwts. per year—Good—Well within 3 year write off.  
30,000 to 50,000 Cwts. per year—Excellent—Well within 2 year write off.  
50,000 up Cwts. per year—Ordinarily within a 1 year write off.

The extremes of table I will defend strenuously as I am firmly convinced that under 12,000 Cwts. per year is out of the question. At the other end it is my firmest conviction that any user from 30,000 Cwts. and up per year is blind to the opportunity if he continues with bag methods.

In this connection I point my finger squarely at the "off shore" users which is another subject in itself. Suffice to say here that in my opinion speculative savings through "off shore" purchases are a great snare and delusion compared to a certain and assured day in and day out savings through bulk handling.

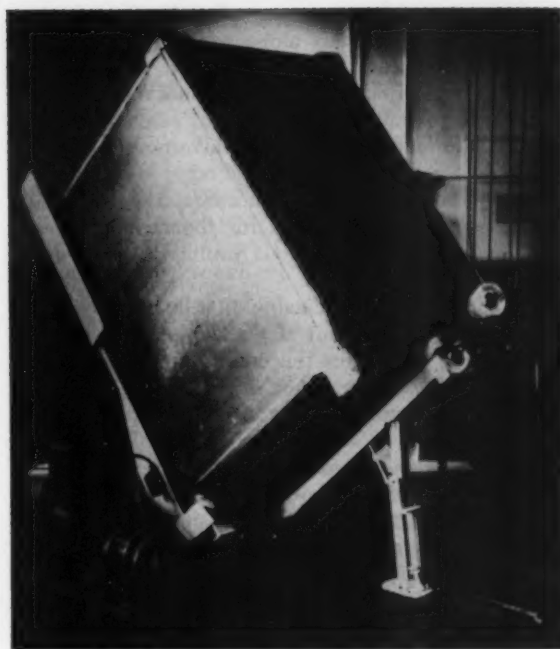
### Advantages of Unit Containers

Once it is determined that the volume is sufficient to justify an investment in bulk handling the next question is that of method between transportable unit containers and fixed storage bins.

This decision encompasses a considerable amount of ground but perhaps most important is that it is believed that unit containers provide the greatest savings per dollar of investment. Flexibility is an important factor. It is a simple matter to add a few containers if volume increases whereas when the top of a storage bin or silo is reached the only solution is another bin or silo which means a comparatively large investment and may impose an inponderable floor space problem. Within plant, unit containers can be transported easily to various points compared to a possible labyrinth of conveyors to use points from central storage. Transportation is still another consideration. Fixed storage sugar users are dependent upon either public carrier railroad rates and schedules or established delivery rates by refinery owned bulk trucks. More often than not the unit container user can accomplish savings in freight by use of contract truckers or by using his own vehicles.

There is some weight of numbers to support this partiality to unit containers. Since unit containers were introduced to the sugar industry the proportion has been nearly 10 to 1 favoring unit containers over fixed storage installations. Some of these unit containers have been in the carload per day category.

There has been a parallel to this in other industries. Companies such as Du Pont, Union Carbon and Carbide and Procter and Gamble are just a few of those who are clearly on the record as favoring unit containers particularly in the construction of new plants where the use of unit containers saves thou-



A Tote Bin in discharge position, releasing its load of 3,600 pounds at a constant rate.

sands of cubic feet of building space compared to that required to house storage bins or silos.

Assuming the user decides in favor of the unit container method he is again faced with the choice between a great assortment of unit containers.

Among these oldest, best known and in most common use is the Tote Bin. Since the advent of the Tote Bin about five years ago there have been about two new types of containers appear each year and many of them for a limited time have been an object of attention. To the best of my knowledge none has yet met any enduring acceptance in the sugar industry.

The Tote Bin does not collapse or nest and there is consequently a mileage limit to the distance a user can be located away from the refinery until the cost of returning the empty Tote Bin consumes the savings. At the moment 250 miles appears to be about the break even point.

Consequently practically all of the unit containers appearing on the horizon since the Tote Bin was introduced have been aimed at the collapsing or nesting principle.

At first blush this principle would appear to be an answer to the long back haul of the container; however, upon analysis there is a limiting economic factor. To illustrate let us assume that 10 empty containers will collapse into the area occupied by one full container. This rate of 10 to 1 means that arithmetically the penalty of return freight on the empties is only 10% which is very good. If 28 of these containers are required to make a full car, then at the 10 to 1 ratio the astounding number of 280 Bins are required to utilize fully the economics of the col-



lapsing principle. At a price of \$300.00 each, the investment in containers alone would be \$84,000. A truck haul would require about half as many, or \$42,000 worth of containers. This is not an imaginary example but is taken from an actual case study.

Even assuming that the above investment was economically feasible there are some other very practical limitations. For one, the mere accumulation of enough collapsed or nested empties for the economical return haul could be a serious problem and a great nuisance.

Further, it is inconceivable that a container can fold or collapse without the annoyance of moving and wearing parts. Just the creation of a hinge that would withstand the rigors of traffic would be a scientific achievement comparable to splitting the atom.

It is manifestly impossible for a container to come apart and to nest without sanitary objections or an expensive and time consuming cleaning operation at the refinery in addition to the refiners' problem of storing and assembling the nested containers prior to filling.

Somewhere a nesting type container must have some finely engineered fittings where it is nested together otherwise there would be leakage. In addition to normal wear and tear one jolt, bump or charge by an overzealous lift truck operator would be disastrous to the fittings.

Another practical problem is at the users plant, where 9 times out of 10 it is required in the discharge process to weigh, batch or meter from the container into the manufacturing processes. Unless the container can be adapted to function as a discharge and weigh hopper at the users plant it is simply inadequate for the needs of the situation.

In deference to its wide acceptance and long use in the sugar industry it is believed that the Tote Bin or rather the Tote System is deserving of some discussion.

Perhaps most important is that all the sugar refining companies in the Philadelphia and New York areas have been equipped to fill Tote Bins for several years and are presently allowing a very substantial differential of \$0.20 per Cwt. from the bag price. Last year about \$10,000,000 worth of sugar was delivered in Tote Bins to various users in the Philadelphia and New York areas so you can see it is a rather sizeable operation.

## Description of Tote Bins

The Tote Bins are made of aircraft aluminum in sufficiently heavy gauge to endure indefinitely. They are air tight and impervious to weather. All the interior corners are rounded and the discharge doors open flush to the bottom of the Bins so in every respect they conform with the strictest sanitary codes in all cities and states.

They are made in two base dimensions: 42" x 48" and 42" x 36". In either of these two base dimensions they can be made in any height from 30" to 99".

The standard Model A-74 Tote Bin which is over-

whelmingly the most common is 42" x 48" x 59" high. Its capacity is 74 cubic feet and on a straight gravity fill at the refinery will contain about 3600 pounds of sugar. All the Tote Bins have 4½" underclearance for easy lift truck handling and the top corners have reinforced pads to permit double stacking in storage.

The Bins are filled through a 9" top opening and the bottom discharge door is 34" wide by 17" high which is large enough even for a man to enter for cleaning or inspection.

All the Bins are evenly tare weighed which enables accurate and quick weighing at both the filling and discharging operations. The Standard Model A-74 Tote Bin weighs 225 pounds.

Virtually all the Tote Bins for sugar are hauled by contract truckers who contract a round trip price for the whole operation. In the Metropolitan areas there are many hauling contracts where the Tote Bin sugar is delivered and the empty Tote Bins returned at a freight cost per Cwt. of sugar delivered which is less than freight cost of sugar delivered in bags.

This may be a little difficult to understand without further explanation; however, the reasons are quite elementary. It is primarily because the truckers like Tote sugar business. No special equipment is required. A flatbed trailer serves the purpose. They get loaded and unloaded very quickly. They can carry 12 Tote Bins on a trailer which is the equivalent of 400 bags and yet be loaded and unloaded in a matter of minutes manned by only the driver with no helper required. Also sugar haulage is steady and regular business which is very desirable, and damage claims are eliminated.

Not so much in the sugar industry, although there is no reason it can't be done, but it is quite common in other industries such as bakeries for flour, to use their own vehicles which works out even more economically than a contract price if such vehicles and drivers are available. One concern has five of their own trucks on the road doing nothing except hauling Tote Bins. The round trip mileage in this instance is 1250 miles yet the investment was liquidated in less than one year through bulk savings.

## Using Unit Containers

A typical Tote sugar operation is one where the trucker goes to the refinery with 12 empty Tote Bins loaded on a flat bed trailer and at the refinery the whole rig including the Bins is weighed in on a truck scale. From the scale the truck pulls over to the side of the refinery and the sugar is spouted into the Tote Bins without them being removed from the trailer. When the Bins are filled the truck goes back over the scale to determine the loaded weight. The user is then invoiced the net weight which is the difference between the gross and tare weights.

Upon arrival at the users' plant the 12 full Tote Bins equal to 400 bags, can be unloaded and stored in less than 15 minutes by one man with a fork or pallet type truck. In storage the contents are impervious to weather, odors, animals and insects. It is also interesting to note that 35 Cwts. in a Tote





A flatbed trailer truck with twelve Tote Bins loading at a refinery

Bin occupy the same cubic space that 21 bags do on a pallet.

The Tote Bins are discharged into the manufacturing processes by means of a Tote Tilt Rack. The Tote Bin is placed on the Tilt Rack which permits the back of the Bin to be elevated to a point where the Bin itself becomes a 47 degree hopper. At this point the Tote Bins have made an air tight, dust tight seal in contact with the Tilt Rack and the Bin door can be opened whereupon the sugar by the force of gravity drops to a screw conveyor in the bottom of the Tilt Rack.

Through this screw conveyor in the bottom of the Tilt Rack sugar can be discharged at any desired rate in any desired amount to any known conveying system, to include screw conveyors, airveyors and various patented conveyors to cite just a few examples.

In many cases the Tilt Racks are arranged to feed directly to pulverizers, existing bag dumps, or scale hoppers without any intermediate conveyors.

In a large operation any number of Tilt Racks can be interconnected and engineered to weigh and feed any number of use points by a push button operation complete with a signal panel.

It might also be mentioned that in the event of an emergency bag sugar can be dumped directly into the Tote Bin Rack. In this connection it is habitually recommended that to gain the utmost economy no more Tote Bins should be purchased than can be kept operating and moving in daily use. For this reason practically all Tote sugar users carry some reserve inventory in bags which they systematically turn over from time to time. One very large company carries a one week bag standby inventory and for 51 weeks a year they operate with Tote sugar and just once a year they use bags for a week to turn their inventory.

It is rather interesting to note that this same company over four years ago bought just half the number of Tote Bins they insisted they needed and in spite of a substantial increase in sugar usage they have never purchased any more Bins. They just move them faster and carry less inventory in Bins. Also after over four years of hard service these particular Bins show no signs of wear outside of some slight superficial scuffing, and this company in the same period has bought less than \$10.00 worth of replacement

parts. About \$9.00 of this \$10.00 has been for lost top lids.

Again to give you something tangible for the purpose of your own estimates I will give you another rule of thumb. In most cases the number of Tote Bins required can be ascertained by taking two days supply plus ten Bins for transit or float. If your average daily use is 175 bags that would be five Bins. Two days supply would be 10 Bins, plus ten for float, equals 20 Bins required.

## Costs of Equipment

The price is always interesting. The FOB factory price of the standard 74 cubic foot Tote Bin is \$320.00. The Tote Tilt Rack is \$635.00. The Tote Tilt Rack complete with motor drive and hoist is about \$1500.00. This can vary a little more or less depending on the type of motor drive required.

For those fortunate few users who have gravity in their favor a gravity type Tilt Rack rather than a screw type Tilt Rack can be used providing there is no objection to a surge of 3500 pounds of sugar from the Tote Bin. The gravity type Tilt Rack of course eliminates the cost of the motor drive.

In the foregoing discussion no mention has been made of special equipment but a great variety of special features can be engineered into the Tote System to meet the users particular requirements. The height of the Bin can be varied from 30" to 99". Lifting lugs can be provided on the top corners for mono-rail transporting. Pyramidal tops can be made to gain a greater fill. Hopper bottoms with slide gate discharges are also obtainable. Legs up to 9" in height have been installed on Bins for users who have standardized on 7" pallet lift trucks. Also stainless steel and mild steel Tote Bins can be fabricated although for the price, endurance and lightness aircraft aluminum is very difficult to improve upon especially for handling sugar.

Just in this calendar year there have been two revolutionary developments that will be of particular interest to those of you who up until now have thought your plant was too far removed from the source of supply for this discussion of unit containers to be of applicable interest.

Three of the largest chain bakeries are this month installing Tote Systems in conjunction with bulk railroad cars for handling both flour and sugar. One is a mechanical system for unloading from the bulk cars into Tote Bins inside the plant. The other two are Fuller pneumatic systems for unloading the cars into Tote Bins. When the sugar or flour is unloaded from the cars and conveyed to the storage area it can be transferred to a cross conveyor which automatically fills one or more lines of Tote Bins, or it can be transferred to a reversing conveyor that is arranged to fill a line of Tote Bins to the right and then automatically reverse the flow to the left so that the operator has time to remove the full Bins from one end of the line and place empty Bins under the conveyor while the Bins at the other end are being filled.

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Time does not permit a detailed discussion of the reasons for these companies choosing this method over conventional storage bins and silos; however, it is certain that in each case there was a careful analysis made before the decision. Comparative cost and flexibility were the deciding factors. In one case the Tote Bin method involved an investment of \$40,000 against \$80,000 for conventional storage bins. The comparative flexibility has already been touched upon earlier.

## **Unit Containers and Railroad Cars**

The possibility of a bulk railroad car and Tote Bin combination is believed particularly pertinent for consideration since it is reported that most of the eastern sugar refining companies are making bulk railroad cars available to their customers, so far as I know, without charge and still allowing the bulk price differential of 20 cents per Cwt.

The second new development is I believe of even more general interest because plants too far removed from their sources for over the road Tote Bins handling and not located on railroad trackage to make use of the bulk railroad car may find this is the solution.

It has been long felt that a container car on a lease basis was legally attainable. Lease basis means very simply that the shipper or user owns or leases the car and the railroad is not required to tie up capital in literally thousands of special tank cars, refrigerator cars, and certain types of covered hopper cars. In return for not being required to make this huge capital investment in special cars the railroads only charge the prevailing commodity rate for shipping sugar in this case from the refinery to the user and make no charge for the return empty haul. In addition the railroads pay the lessee a mileage allowance for the total mileage the car travels both loaded and empty. By regulation this mileage allowance can never exceed the monthly rental but it is frequently equal or close to it.

Such a special railroad car capable of transporting Tote Bins has been designed and built, and is presently undergoing test. Before this car can be marketed there are several more steps to be undertaken, but at this point about 90% of the battle has been accomplished. It should not be more than several months until a final decision is reached and if favorable it will no doubt receive an immense amount of publicity.

In conclusion I would like to say that if your volume exceeds 20,000 Cwts. annually I believe most sincerely that it will pay you to investigate all the possible methods of bulk handling that are available to you as it is entirely possible that these bulk savings of \$6000.00 and upwards will represent the cream each year after taxes. I don't personally believe that we are destined for recession or depression but as a matter of insurance and good sense it behooves the industry to look toward better ways and means to handle sugar in bulk.

*—the end*

# Pneumatic Conveying of Sugar

by ROSCOE R. HEARD, JR.

Sales Engineer, Fuller Company

THE actual art of the practice of pneumatic conveying as we know of it today has been employed in European nations for about 100 years, whereas in this country it did not gain a firm foothold until around the turn of the century. Since that time however, its application has become quite commonplace throughout American industry as a tried and proven means of conveying most any pulverized, granular or crushed material. In this respect you will find pneumatic conveying serving most any field of industry, such as, the mineral, plastics, paper, chemical, steel, food, and all others that may have any material handling problems. Not only is it versatile as to the type of industry it may serve, but also to the work done per time unit, considering that there are installations in operation that are handling anywhere from a few pounds per minute to as much as 10,000 pounds per minute.

In any general discussion of

pneumatic conveying it is always well to differentiate as to the type of system in question, because, regardless of the fact that they all employ air as a conveying medium, each one utilizes it in a slightly different form. Basically there are considered to be three distinct types of systems, namely, low pressure, medium pressure and high pressure, with all three having their particular application, depending on the specific requirements in each case.

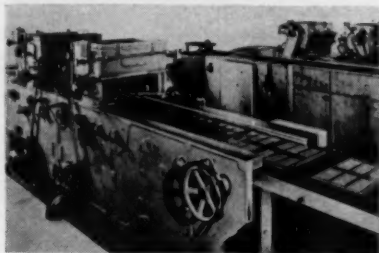
When broken down as to related requirements the different types could roughly be classified as follows:

- (a) Low Pressure—In general, this type of system is normally referred to in the case of a dust collecting system, or, even in the case of light duty low capacity conveying circuits, whereby an ordinary fan is employed for providing the propulsion of the conveying air. The working differential
- on this type of system is limited to about 1 to 2 pounds per square inch working differential.
- (b) Medium Pressure—This type of system is what is referred to as dense stream conveying, or, a system that is purely intended for the movement of heavy loads of material from one place to another. In this case the usual practice is to employ a Roots type of positive displacement blower, which will allow for a working differential of anywhere from 3 to 10 pounds per square inch.
- (c) High Pressure—Actually, this type should be referred to in more general fashion, as being of the higher pressure type, because it takes in systems that operate on a basis of anywhere from 15 to 100 pounds per inch working differential.

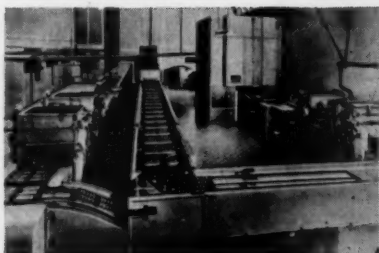
(Continued on Page 34)



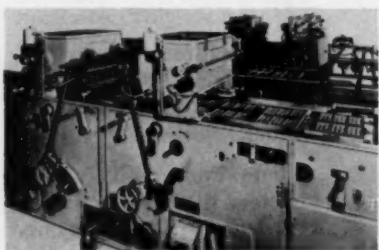
# LEHMANN *Announces*



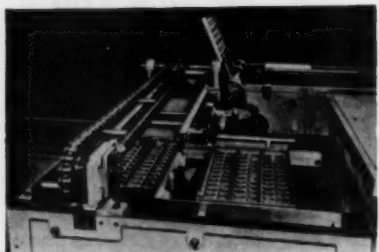
Cream Depositor



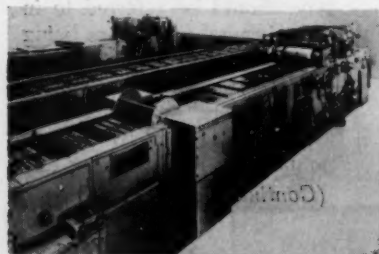
Helios Helko Hollow Mould Plant



Chocolate Depositor

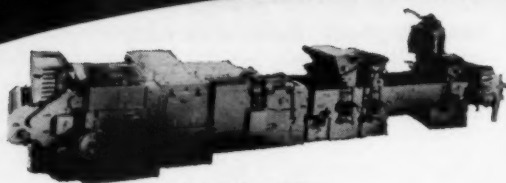


Automatic Scraping Off and Turnover

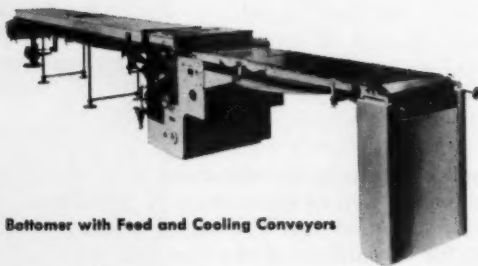


Turnover Device and Shaking Out Plant

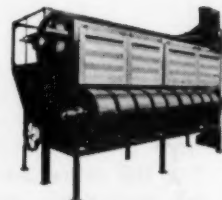
## AN EXPANDED LINE OF CHOCOLATE PR



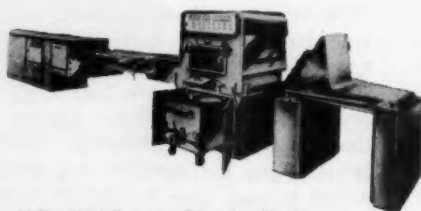
Helios Megul Plant



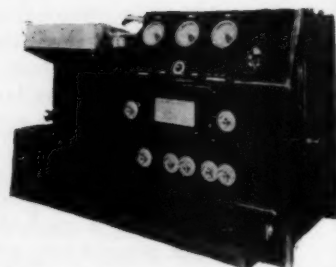
Bottomer with Feed and Cooling Conveyors



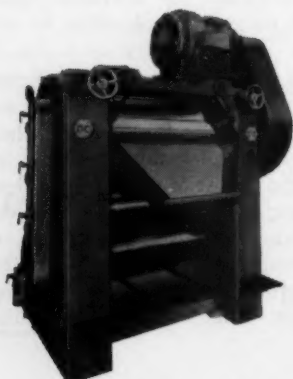
Cracker and Fanner



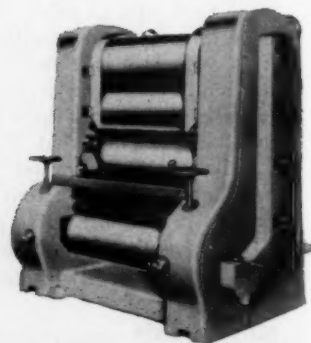
Helios High Capacity Chocolate Enrober



Helios Automatic Chocolate Tempering Machine

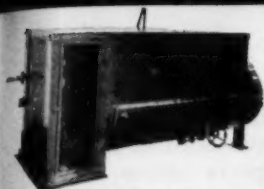


651-CV Sight-O-Matic Chocolate Refiner

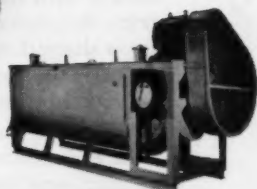


912 High Production Chocolate Refiner

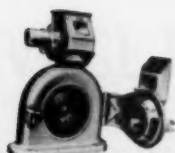




10M 1000 lb. Paste Mixer



40M-U 4000 lb. Emulsifier

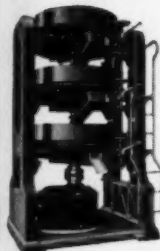


Pinned Disc Pulverizer



Almond Blancher

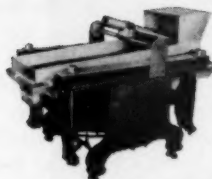
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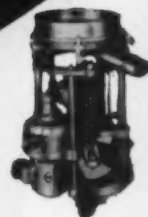
Drip Feed Tempering Unit



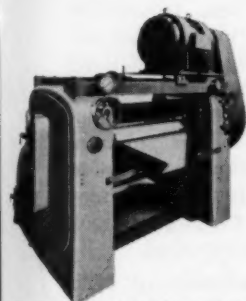
Continuous Separator



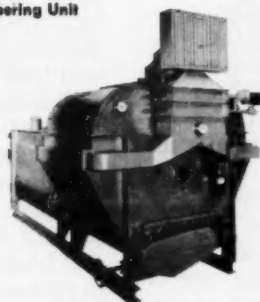
Helios Automatic Feeding Machine



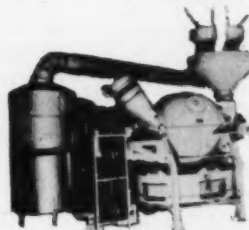
Variable Speed Sieving and Straining Machine



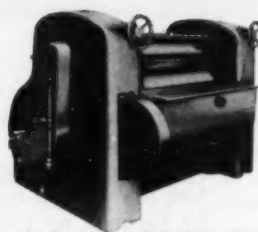
631-CV 3 Roll Sight-O-Matic Refiner



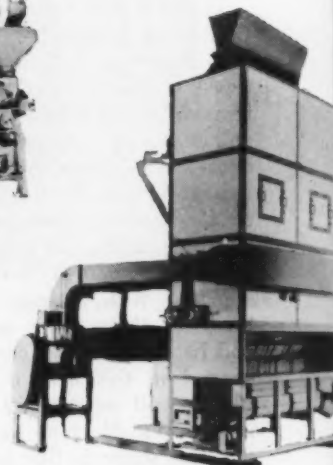
450 Disc Conche



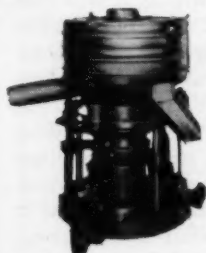
Sirocco Roaster



913 CA-L Three Roll Liquor Mill



Continuous Roaster



Cascade Stand Model, 3 Stage Sieving Machine

LEHMANN contributions to the technological development of chocolate and confectionery processing machinery have been notable for many decades. Consequently LEHMANN machinery is highly regarded for quality of design and construction. It has been our policy to bring to our American customers the best machinery available in the world (regardless of where it is built) and at fair prices.

So once again LEHMANN brings modern designed, well built machinery—the finest products of European ingenuity—to add to

its line of American built machines. Our customers have a wide selection of the best, coupled with the assurance that every machine is backed by ample factory and technical service facilities.

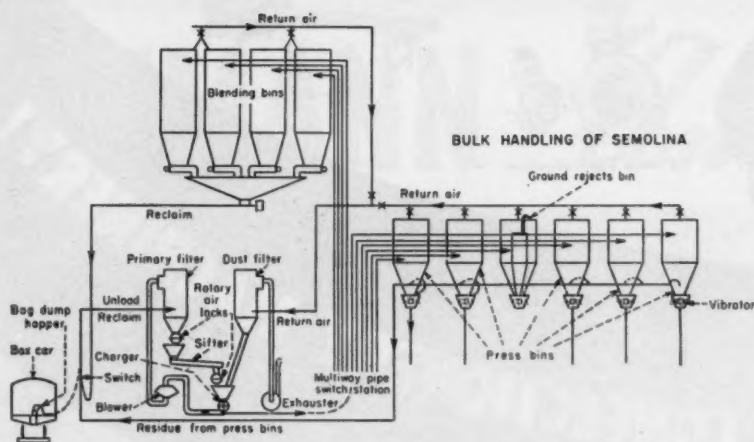
Shown here are machines typical of the line that is offered. Some of these are built in such well known European factories as Winkler & Dunnebier, G. W. Barth, Russell Constructions Limited, Stephens-Smith & Co., Ltd., Condux-Werk and Thouet.

Write or telephone for further information.



## J. M. LEHMANN COMPANY, Inc.

MAIN OFFICE AND FACTORY: 546 NEW YORK AVE., LYNDBURST, N. J.



A bulk sugar installation, showing hopper car receiving and entirely automatic handling through storage hoppers to use bins.

ferential. Falling within this category would be the Fuller-Kinyon Pump and the blow-tank type of systems, which I can assure you are extensively used throughout industry.

The only reason for going to the trouble of pointing out the fact that there are definitely different types of pneumatic conveying systems to be had is in order to avoid any chance of a misunderstanding, because this paper will hereon be limited to one specific type, that of the medium pressure variety. In this connection it might be well to point out that the concern I am affiliated with actually manufactures all three types of systems, and based on their 30 years background in this field it has been pretty well established that the most applicable type for the handling of sugar is that of the medium pressure variety. With us this type is referred to by the copyrighted name of the Airveyor. Therefore, for ease of reference from here on I will refer to a pneumatic conveying system by this name, and trust that you may not necessarily construe it as a form of commercialism.

With these more or less intangibles out of the way, let us now get on with the physical make-up of an Airveyor System, which may vary considerably in each case, depending upon the exact nature and extent of each problem. From an equipment standpoint an Airveyor basically consists of conveying

duct, or, so-called material transporting lines; an air-material separating unit; a rotary discharge lock or line charger; and an air supply machine. Depending on the nature and extent of the problem at hand these essentials may be changed around to form what is referred to in the trade as being a straight vacuum system; a straight pressure system; or, a combination of the two, which is referred to as being a pull-push type of system. A vacuum system employs a negative displacement of air, or a partial vacuum, for accomplishing the movement of the material through the conveying lines, whereas the pressure system employs a positive displacement of air, or pressure, for accomplishing the same. In the case of a so-called pull-push type of system the pick-up end is motivated by vacuum, up to a certain point from where it is conveyed to its destination by pressured air. With this type both the inlet and outlet of the air supply machine are employed, one for vacuum and one for pressure.

Along with the many possible variations in the physical make-up of an Airveyor System, goes the most important factor of all in connection with pneumatic conveying, that being its extreme flexibility. Therefore, before touching upon any design aspects of the actual equipment I feel that it will be well to first correlate these two factors; by tying in the type of

system with the actual application from the standpoint of flexibility. In so doing I will endeavor to exemplify the type of system with an actual problem as it might exist in your plant.

In the case of a candy factory, as with any other manufacturing plant, the first material handling problem encountered is that of incoming ingredients, which in a candy factory ends up as being predominantly sugar. As in the case of other food industries it is no more than right to assume that over the years you have received your sugar in bags, which is the time honored, and rather expensive method of receiving any material in very large quantities. As in the case of many other food industries, the modern trend has been to receive materials in bulk, which has been brought about by the development of several types of bulk railroad cars, or, even bulk trailer units. Therefore, assuming that for competitive reasons you will want to take advantage of the savings that can be accomplished by the purchase of bulk sugar, we will assume that you will arrange for receiving bulk shipments, or, in other words install bulk storage bins. As concerns the savings that may be accomplished by receiving any material in bulk, it is all important to point out that not only is there a considerable saving in the purchase price of the product, but also in the labor costs that are inherent in the handling of the bagged stock into and within your plant.

With the installation of bulk storage facilities the Airveyor comes into its own, as it will provide for the most sanitary and what we consider to be the most maintenance-free means of unloading most any bulk carrier. As in the case of 99 out of 100 unloading applications a straight vacuum type of system would be employed. From an equipment standpoint it would have the air-material separator unit mounted over the storage bin, or bins, with the material conveying line running from it to the car station, wherever it may be in relation to the storage bins, whether it be 50, 150 or 500 feet away. In the case of a row of bins,

or silos, it is of course quite commonplace to employ a mechanical conveyor for distributing the material to the various bins, which should be of sanitary construction. From an operational standpoint it would merely require that an operator connect a section of flexible metal hose between the end of the conveying line and the car, then push a button, after which the material would be automatically sucked from the car and delivered into the storage bin, via the separator unit over the bins. With such a set-up you will readily be able to see that it makes the most simple of installations, requiring nothing in the way of a track hopper or enclosed track shed, and most important of all can very easily be handled by a single operator.

In the above explanation of a typical unloading system it might be well to point out that the Airveyor is not limited to only the unloading of bulk cars. In the event you may have an air unloading system and on occasion receive a carload of bagged sugar, it is a very simple matter to unload the bagged stock into the bulk bins, rather than utilize valuable space for storing them as you had done in the past. This is accomplished by using a portable bag dump hopper connected to the end of the flexible hose within the car, whereby the bags are merely ripped open, dumped into the hopper, and the material whisked away into the storage bins in the very same fashion as with the bulk car.

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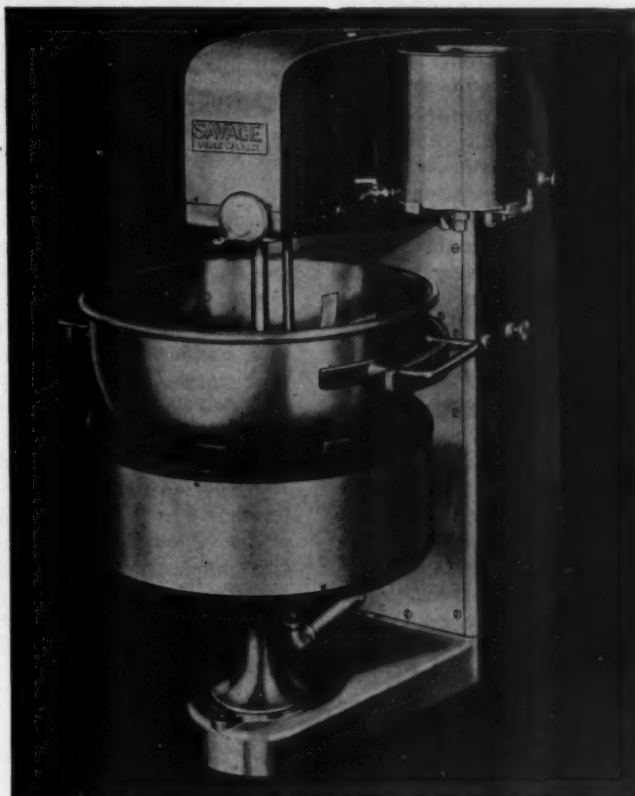
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for July, 1954

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Now that we have the sugar in the bulk storage bins the next problem to be encountered is its distribution to the various use points throughout the plant. Here we will find that it may have to be delivered to a daily use bin, or to holding hoppers or weigh hoppers over one or more pulverizers. Regardless of the number of points it must be delivered to or the distances involved it nevertheless becomes quite a simple problem to accomplish pneumatically. Here you may naturally assume that with several delivery points at remote locations it would require several systems, however, such an assumption would be entirely incorrect, because with the Airveyor it is entirely within the realm of reason to serve as high as 20 to 30 delivery points with a single system.

Here is where we normally employ the pressure type of system, which is ideally suited for delivery to a multiplicity of use points. For explanation purposes in this respect let us assume that you would have a storage bin, and would have to deliver from it to either one of three use hoppers located over pulverizers. Moreover, let us assume that the pulverizers would be in another part of the plant, say about 100 feet away, and on an upper floor, at where they would be spaced throughout a large room.

From an equipment make-up a system for accomplishing such requirements would basically consist of the following components:

- (a) A blower unit assembly, which would be located somewhere in the vicinity of the storage bin. From the standpoint of space requirements this assembly normally requires about 5 feet square.
- (b) A line charger feeder at the outlet of the storage bin, which in most instances would also be required in the case of a mechanical handling system.
- (c) A single conveying line running from the discharge of the bin to the pulverizer room, where there would be a series of conveying line switches for diverting the conveying

stream to the individual use hoppers.

- (d) Since this system is of the pressure type it is of course necessary that the conveying air be vented, which is accomplished by running a common manifold from the outlets of the use hoppers to a dust collector located in some convenient area within the pulverizer room, or, even in some adjacent room in the event space may be at a premium in this particular area.

From this brief word description you can see that such a system would provide for the utmost in simplicity of layout and installation. For instance, on the basis of the assumed layout there would probably be an over-all conveying distance of something in the neighborhood of 175 feet, based on a 100 feet horizontal and going up through 4 or 5 floors, yet all that would be required between these two points for transporting the sugar would be a relatively small diameter pipe. The Airveyor would also make for a much neater appearing installation, which in the case of the food industry is becoming a more important factor every day. As for the operation of such a system, here again we can use the word simplicity, as the entire flow requirements of sugar could be controlled by a single operator on the pulverizer floor, by the mere push of a button.

As in the case of the unloading operation, it should also be pointed out at this time that it is not mandatory to be set up for handling bulk sugar in order to gain the advantages of the Airveyor for the in-plant handling of your sugar, for there are installations that are solely intended for handling bagged stock within the plant. In this case there would be a bag dumping station within the bag storage area, where the contents of the bags would be fed into the conveying stream. Or, it might be well to add that the Airveyor can also be applied in the case of Tote bins, which is accomplished by having a tilt station for discharging the contents of the bins into the conveying line.

Now that we have a general idea as to the physical layout of an Airveyor System, let us now look into the design aspects of some of the equipment that is incorporated into its make-up. In breakdown fashion the primary components would be as follows:

- (a) Air Supply Machine—This is the unit that provides the propulsion of conveying air throughout the transport lines. As pointed out previously, it would be a Roots type machine, which is a heavy duty cast iron unit that provides for years and years of trouble-free service.
- (b) Air-Material Separating Unit—In essence, this component may be considered as one of the most important items of equipment, inasmuch as it provides for one of the outstanding advantages on an Airveyor, a 100% visible retention of dust in the exhaust air. As the words imply, it is this unit that provides for the separation of the air and the material at the end of a conveying stream, where it is passed off into storage or to distributing conveyors by means of a rotary discharge lock. In the case of a vacuum system we refer to it as a filter, which in reality is a cyclonic separator and a cloth filter built into one integral unit. From the standpoint of design it is of durable construction, and completely automatic in action, thus providing for attention-free operation at very minimum maintenance costs. In the case of pressure systems having a multiplicity of delivery points, we employ simple cyclonic separators at each delivery point, which are always supplemented by a cloth type collector at the end of the series in order to assure a 100% dustless operation.
- (c) Conveying Duct—While such a simple and general term such as "conveying duct" may not appear to have too much significance to you offhand, in it lie some of the most important advantages of pneu-



matic conveying. It provides for ease of installation, considering that it is easy to run wherever required, as through buildings, through existing pipe wells, over streets, or even underground. In view of this factor it would not be any more trouble to install in an existing plant than in a new one. Secondly, and probably one of the most important advantages of conveying duct as it is applied in pneumatic conveying, is its sanitation feature. We have a heavy walled tubing, which is entirely air-swept with a high velocity air stream so as to make every foot of it self-cleaning. This means that every ounce of material that enters the system is immediately carried to its destination, which eliminates any dormant areas of movement that are inherent with most mechanical conveyors. All other components of the system in contact with the material being conveyed are also air-swept, or of suffi-

cient slope as to prevent any build-up of material. In fact, before offering pneumatic conveying to the food industry on a general basis we first of all consulted with what is considered to be one of the most exacting health authority organizations in the country, the Health Department of the City of New York, which passed it as being the most up-to-date and sanitary method of handling food ingredients in bulk form.

- (d) Conveying Line Switches and Diverting Valves—While not being touched upon to any extent thus far, here are some components that add considerably to the flexibility of the Airveyor, in so far as they allow for ease of diverting the conveying stream into different directions to be able to serve a multiplicity of delivery points, or to be able to pick up from any number of feed-in points. Up until about a decade ago it was more or less an accepted practice to

employ nothing but manually operated switching elements, however, recent years have seen the development of a full line of automatic conveying line switches, diverting gates, and turnheads, which collectively will provide for the complete remote operation of the system from a central control panel. Just to cite one example in this respect I might point out that one of the biggest food plants of its kind in the country is equipped for handling their entire flow of sugar and flour practically 100% automatically, with the entire operation handled by one man at a central control panel.

In summation of the above it can be said that pneumatic conveying has many outstanding advantages, among which are simplicity of layout, ease of installation, flexibility of application, low handling cost, cleanliness of operation, low maintenance costs, and the utmost in sanitation.

—the end



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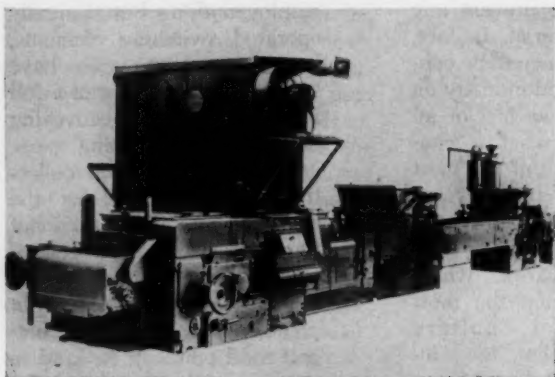
Chocolate manufacturers use the Stehling Mixer as an emulsifier. The manufacturing confectioner also needs the emulsifying action to provide his enrobers and dippers with chocolate of original and uniform viscosity.

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Winkler & Dunnebier multi-depositor starch machine with built-in pneumatic starch cleaning and conditioning unit



Felix Hoppe paste filling, forming and cutting machine

## The Hannover Fair

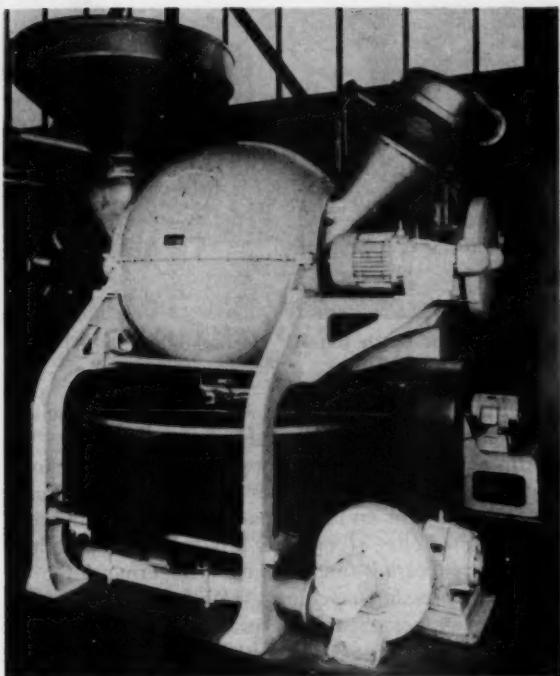
Report by M. G. READE, *London*

THE German Hannover Fair (Technische Messe), held during the last few days of April and the first few days of May each year, continues to expand and now stands unchallenged as the principal European confectionery machinery exhibition of the year. Major confectionery manufacturers seem to have been allowing themselves an average of three days in which to inspect the exhibits this year, but even then there did not seem to be time enough for a serious study of the many other exhibits besides confectionery machinery. The Fair actually covers a very wide range of activities, extending from photography, chemical and electrical engineering to china and glass, yet it is so well supported by the confectionery machinery trade that it never seems possible to digest the whole of this section, let alone the remainder.

As might have been expected, machines and processes which economize cocoa butter were being stressed by all who could offer them, and the tendency in Germany is clearly to push the chocolate shell plant at the expense of the coating machine. No less than four manufacturers showed parts of their shell plants, whereas there were only two varieties of coating machines on show, for all that there must be at least forty or fifty times as many coating machines in operation as there are shell plants. The shell plants

to be seen, at least in part, since complete shell plants are very bulky pieces of equipment, were those of Winkler & Dunnebier (J. M. Lehmann, Inc.), Carle & Montanari (C. A. Masherin), Bindler (T. C. Weygandt) and Loesch (Geveke & Co.). Winkler & Dunnebier also showed a specialized starch plant, complete with built-in pneumatic starch cleaner and conditioner.

On the sugar confectionery side, the greatest reliance is placed on mass production by means of highly mechanized plants, designed for high quality continuous working, combined with economic and attractive pre-packing into small units. Hansella (Package Machinery Company) for instance, were showing their latest fully automatic continuous ingredient metering, dissolving and vacuum cooking plant, with a unique air lock between the boiling and vacuum sections, which coupled with the usual tempering, rolling and forming equipment, will turn out clear hard candy, of low or high corn syrup content, almost without supervision. They also showed several versions of their well known "Transwrap" continuous bag forming and filling machinery. Equally, Messrs. Theegarten (Geveke & Co.) were showing very high production units of a similar order of mechanization, based on the popular Volkmar Hanig designs of vacuum



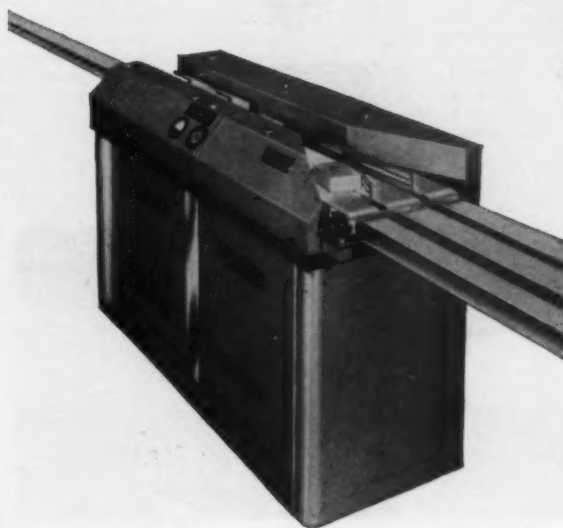
G. W. Barth cocoa roaster with automatic controls



Bauermeister stand showing cocoa powder dressing plant, various pulverizers and a rotor chocolate conche

cooker, coupled with the Rose range of automatic packaging machines (American Machine & Foundry Co.) Haensel-Junior (Peerless Machinery Co.), as well as producing rather simpler vacuum cookers, tempering equipment, fondant making plants, etc., and a new batch toffee boiling pan, have also been developing a range of small but effective high speed packaging machines for producing neat packages containing anywhere from 2 to 20 pieces of candy.

The German trade has always taken a great interest in chocolate making and all the usual equipment in the way of roasters, winnowers, paste mixers, continuous mixers, multi-roll refiners, conches, automatic chocolate tempering equipment, bar moulding plant, etc., was to be seen. There were at least two completely new styles of conche, the giant Lehmann "Stromwegs-Conche" and a new Petzholdt series entitled "Turgo-Conches," and there were also new styles of cocoa nib grinding and processing equipment by Messrs. Solich of Bad Salzuffen and Messrs. Hoffman of Rheinfelden (Switzerland). Bauermeister (Geveke & Co.) had a large display, including their latest style of unit cocoa cake pulverizing, cooling



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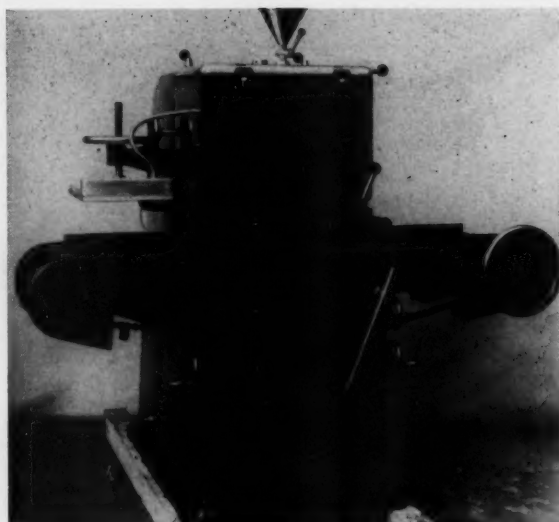
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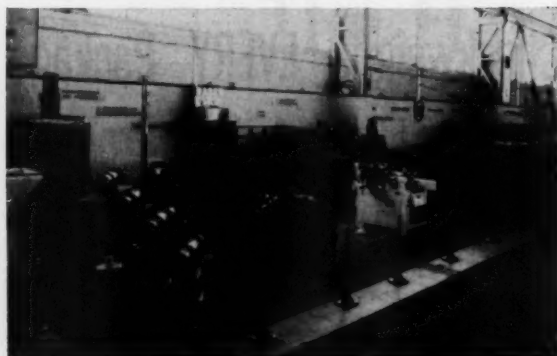
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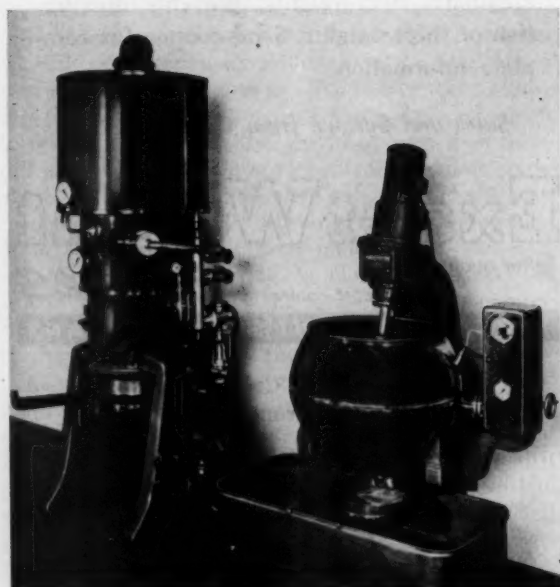
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Loesch chocolate and cream depositor for use with their shell plant



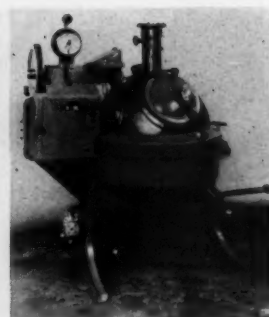
Stand of Wilhelm Rasch



Theegarten continuous pre-mix dissolver and vacuum cooker



Haensel-Junior batch toffee vacuum pan



Haensel-Junior hard candy center filler

and sifting plant, as well as modern refiners, conches, cocoa nib grinders, sugar pulverizing mills, etc.

Another feature of the European trade is the range of specialty machines of individual processes, ranging from fondant and marzipan forming and shaping machines (Felix Hoppe, O.K.A., Hutt G.m.b.h.), almond processing and slicing (Bauermeister), to tabler compressing machinery (Wilhelm Fette), vermicelli machines capable of producing various fancy shapes of candy (Haensel-Junior, Hutt G.m.b.h.) mould washing and drying machines (Henri le Cerf), and so on.

It will be appreciated that if three days were scarcely adequate to cover the exhibits, this report can hardly claim anything approaching completeness. Your correspondent admits that he has done little more than pick out a few of the items which seemed to him to be of particular interest, but it would also be quite impractical, as well as indigestible, to attempt the encyclopaedic type of report which such an exhibition suggests. Actually, there were 3911 exhibits, housed in more than 2,000,000 square feet of exhibition halls and another 600,000 square feet of open air exhibits, but fortunately, only a small proportion of these dealt in confectionery machinery. Visitors totalled about one million and amongst them were seen executives of the leading American machinery supply concerns, who will doubtless be able to pass on considerably more information than can be included in this brief account.

Though finished confections were not a part of the exhibition, it was possible for anyone to form a very good impression of the technical possibilities of confectionery production with European equipment, and to weigh up the pros and cons of the various styles of confection which can now be made on a mass production basis. There can be little doubt that this exhibition is invaluable to all concerned with machinery buying and policy determination. Even now reservations are being made for next year, and intending visitors would be well advised to contact their European machinery supply agents, with a view to securing comfortable accommodations whilst they are still to be had. Hannover is a large city, but visitors can easily find themselves commuting 20 or 30 miles, or living under unduly austere conditions, if they do not look ahead.

—the end



# Patents

2,678,276

## PROCESS OF MAKING A CONFECTIONERY OF THE GUMDROP TYPE

Richard M. North, Northfield, Ill., assignor to Farley Manufacturing Company, Skokie, Ill., a corporation of Illinois

Application September 20, 1951,

Serial No. 247,455

7 Claims. (Cl. 99—134)



1. A process for manufacturing jelly confectioneries of the gum drop type which comprises mixing sugar, water and starch to form an aqueous dispersion, the ratio of starch to water being within the range of about 4% to about 7½ pounds of starch for each gallon of water, cooking the resulting dispersion at between about 250° and about 300° F. under super-atmospheric pressure for a period of less than one minute, and thereafter cooling said dispersion whereby to form a jellied confectionery.

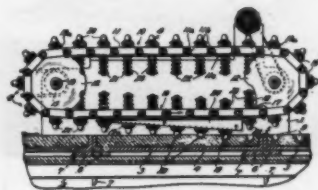
2,677,333

## CONTINUOUS MOLD-FORMING APPARATUS

John S. Truesdell, Columbus, Ohio  
Application November 19, 1951,

Serial No. 257,043

2 Claims. (Cl. 107—3)



1. In a continuous press for producing cavities in candy-forming molds, said press being of the type having a frame structure formed with a longitudinally extending guideway for the slidable reception of a plurality of open-topped mold trays containing pressure-displaceable moldable material; means for advancing said trays continuously at a predetermined rate of linear travel along said guideway; a pair of parallel sprocket-carrying shafts journaled for rotation in connection with said frame structure above said guideway; a pair of trans-

versely spaced, parallel, longitudinally extending endless chains trained around the sprockets of said shafts; longitudinally spaced transversely extending bars secured at their ends to said chains, said bars being formed with bearing sleeves; die-carrying strips provided with stems slidably mounted in the bearing sleeves of said bars; spring means cooperative with said bars and stems and operative to apply forces to said strips serving normally to maintain printing dies carried by said strips in positions removed from printing contact with molding material present in associated trays; stationary cam means carried by said frame structure for

gradually moving said strips and die means into relative cavity-forming engagement with said molding material during longitudinal advance of registering and adjacent trays and die-carrying strips; and means for imparting synchronized movement to said trays and strips, said cam means being of such effective length as to move the strip-carried dies into full cavity-printing contact and formation with said moldable tray material and upon the completion of the cavity formation to release said strips to effect abrupt retraction of the strips and their instantaneous withdrawal from said moldable material under the action of said spring means.

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- \* White Glazed Enrober Belting Double Texture—Single Texture; Double Coated
- \* Caramel Cutter Boards and Belts
- \* Bottomer Belts (Endless—Treated or Untreated)
- \* Feed Belts (Endless—Treated or Untreated)
- \* Packing Table Belting (Treated and Untreated)
- \* Innerwoven Conveyor Belting
- \* Batch Roller Belts (Patented)
- \* Wire Belting
- \* Vee Belts
- \* Hose (Air; Water; Steam; Oil; Creamery)

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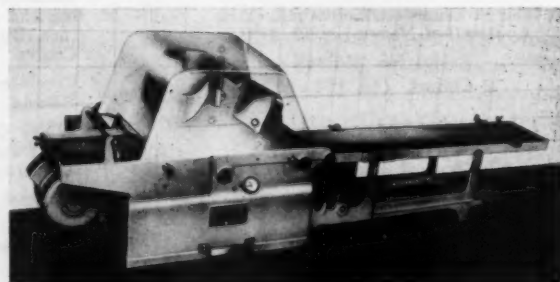
## What's New in Candy Equipment

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For further information write: Vacuum Candy Machinery Company, 15 Park Row, New York 38, N. Y.

The Drage Viscometer has been developed to meet the need for rapid and accurate measurements. Frictional forces, which are linearly related to the viscosity, are transmitted through a rotating measuring element to a rotatable mounted motor, the torque of which is opposed by a precision constant modulus hairspring. A pointer, which is attached to the motor casing, directly indicates the viscosity while in operation. The instrument has three speeds, 20, 64 and 200 RPM. Changes in viscosity are indicated instantly, making this instrument ideal for continual control purposes.

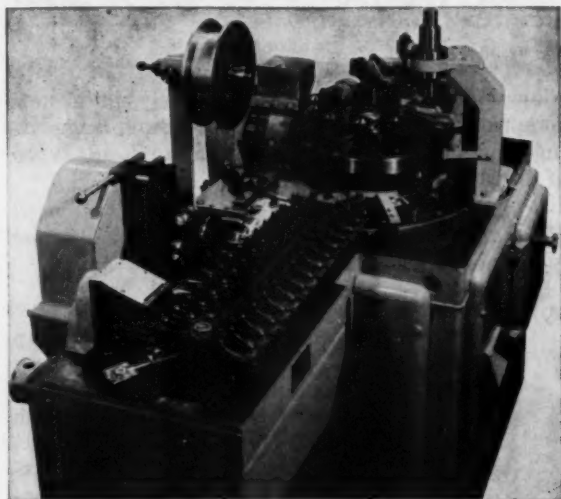
For further information write: Drage Products, 406 32nd St., Union City, N. J.



Small Chocolate Coaters have been introduced to this country. They are seven inch and twelve inch machines for smaller users of coated goods, and for larger manufacturers for specialty pieces. The seven inch model has a capacity of about 400 pounds per day, and the twelve inch will produce about 800 pounds per day. A take-off device discharges coated pieces on pre-cut sheets of paper, allowing for a marked decrease in both labor and material costs. The machines are equipped with variable speed drives and electrical heaters, thermostatically controlled. The blower unit has its

separate motor and adjustable air intake for complete coating control.

For further information write: Geveke & Company, 25 Broadway, New York 4, N. Y.



**A Wrapping Attachment for a Die Pop Machine** has been announced that provides substantial savings in labor cost in the making of pops. With this machine, one operator can form and wrap up to 200 pops per minute. The attachment eliminates all handling of the pops between the form-

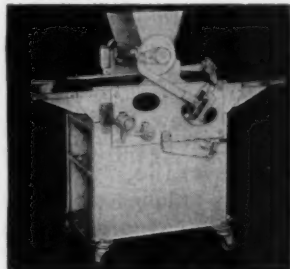
ing and wrapping operations, and does away with all breakage. A sandwich wrap is used which uses a minimum amount of cellophane, up to 50% less than some other types of wraps.

For further information write: John Sheffman, Inc., 152 W. 42nd St., New York 36, N. Y.

**New Inks** for code dating machines have been developed that are waterproof, nontoxic and nearly non-evaporative. Being nearly non-evaporative, they go at least three times as far and therefore cost less. Gummed tape markets will operate three times as long on one inking and will start printing immediately after a few days shutdown. No thinner or cleaning is necessary. Available in black, blue, green, red and silver. For further information write:

Kiwi Coders Corporation, 3804 N. Clark Street, Chicago 13, Illinois.

**New Mix Cooker** has been developed which combines the merits of a smooth running agitator and sanitary style steam jacketed kettle. The double motion agitator, in which the paddles turn counter clockwise and the scrapers clockwise, provides speedy and thorough mixing. The nylon scrapers eliminate surface film on the jacket which speeds cooking and reduces the chance of burning or scorching. The agitator can be removed when not needed. With either variable or constant



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EASY TO CLEAN  
EFFICIENT

**THE TRIUMPH CANDY DEPOSITOR** eliminates the expensive hand labor cost of forming hand roll cream centers. It is easy to clean . . . keep clean. Triumph Depositors are low in initial cost . . . low in maintenance cost.

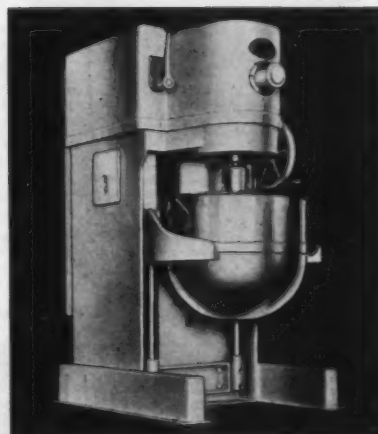
**WRITE TODAY**  
for full information

**TRIUMPH MIXERS** are available in a wide range of capacities, 20, 30, 60, and 80 quart. They are easy to operate . . . easy to clean.

**THE TRIUMPH MANUFACTURING CO.**

3400 Spring Grove Ave.

Cincinnati 25, Ohio





## MILL RIVER Water Sealed PUMP BARS



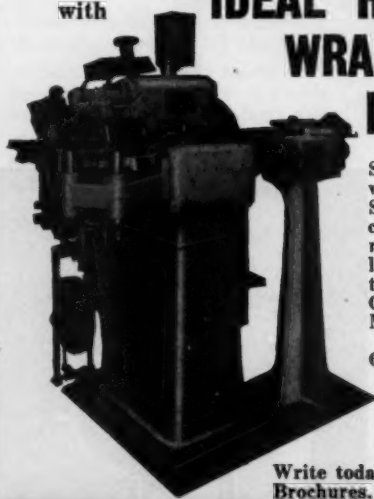
These Pump Bars are made to fit all depositors. Can replace cup type bars on No. 2 and No. 3 depositors without altering machine.

**Stainless Steel  
Pistons**  
No grooves—no washers, cleaner and more sanitary.  
Single, Double, Triple, Quadruple.

**MILL RIVER TOOL CO.**  
WORTHINGTON ST., SPRINGFIELD, MASS.

**Speed Makes The Difference!**

**450 CARAMELS CUT and  
WRAPPED EVERY MINUTE  
with IDEAL HI-SPEED  
WRAPPING  
MACHINE**



Speed that's always dependable—Safety that can be counted on—maximum production at least cost—that's the Ideal Special Caramel Wrapping Machine!

Only 2 personnel required for this entirely automatic operation.

Write today for FREE Brochures.

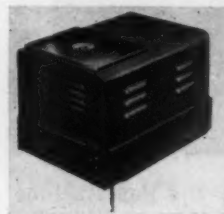
**IDEAL WRAPPING MACHINE COMPANY**  
MIDDLETOWN, NEW YORK, U. S. A.

speed drives, these kettles are available with or without the agitator in 30 or 500 gallon sizes, built for pressures of 90 and 125 psi. For further information write:

*Hamilton Copper & Brass Works, Dept. 14, 820 State Ave., Cincinnati, Ohio.*

**Flow Meters** are treated extensively in a new composite catalog. Indicating, recording, integrating and controlling are covered, and all types of installations are described.

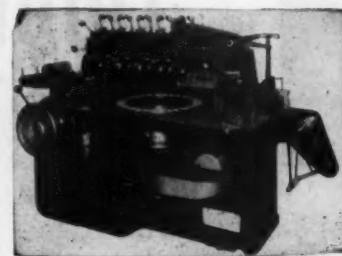
For further information write: *Honeywell Regulator Company, Industrial Division, Wayne & Windrim Aves., Philadelphia 44, Pa.*



**Semi-Automatic Lollipop Wrapper** is now being manufactured which twists and heat-seals as many as 30 or more pops a minute, and makes the perfect auxiliary or emergency machine. Simply constructed, heads are interchangeable for various size pops, and

is operated by means of an adjustable foot pedal, leaving both the operator's hands free for feeding. This wrapper was formerly made by I. L. Mitchell Co.

For further information write: *Ebert Electronics Corp., 212-26 Jamaica Ave., Queens Village 28, N. Y.*



**New Foiling and Wrapping Machine**, with a unique gripper system, wraps regular and irregular shaped candies at high speed. It will handle all types of chocolates,

Easter eggs and bars, even the most fragile, at 160 pieces per minute. It handles pieces up to 5 inches in length and 2½ inches in width. In the larger sizes the speed is up to 90 per minute. Wrapping material may be any type of foil, paper or film, and will make envelope wrap, face folds, twist wrap with or without under strip or flange, sachet and mushroom wraps and all the standard wraps that can be applied to films. Optional equipment can be provided to furnish automatic print registration (feeler holes or electric eye), easy opening tapes, tabs, banding, labeling, crimping, pleating, etc.

For further information write: *Peerless Confectionery Equipment Company, 158 Greene St., New York 12, N. Y.*



# Confectioners' Briefs & Calender

## JULY

- July 2—Kansas City Candy Club, Town House, Kansas City, Kansas.
- July 6-9—National Confectionery Salesmen's Association annual meeting.
- July 8-10—Pennsylvania Manufacturing Confectioners' Association annual meeting, Galen Hall Country Club at Wernersville, Pennsylvania.
- July 9—Carolina Confectionery Salesmen's Club monthly meeting at Kuester's, Charlotte, North Carolina.
- July 13 and 27—Semi-monthly meeting of the Detroit Tobacco & Candy Round Table, Hotel Detroit.
- July 16—The Denver Association of Manufacturers Representatives' monthly meeting, Daniels & Fisher Club rooms.
- July 16—Great Plains Candy Club monthly meeting, Castle Hotel, Omaha, 12:30 lunch.
- July 21—Southern California Association of Tobacco Distributors, Inc., monthly meeting, Chapman Park Hotel, 6th and Alexandria Sts., Los Angeles.
- July 30—Dallas Candy Club monthly meeting at the Semos Restaurant, 505 Fort Worth Avenue, Dallas, at 12:30.
- September 23-26—Packaging Machinery Manufacturers Institute, annual meeting at Grove Park Inn, Asheville, North Carolina.
- September 28-30—National Industrial Packaging & Materials Handling Exposition, Chicago, Illinois.

**John L. Bricker** has been named vice president in charge of advertising and merchandising by the **E. J. Brach & Sons Company**. Prior to his coming with Brach, Mr. Bricker was associated for five years with the Colgate Palmolive Company as assistant sales manager and sales promotion manager of the toilet article division.

**R. L. Henderson**, president of **Norris Candy Company**, has announced major changes in the executive staff of the company, due to an expansion in year-round sales resulting from new products and new techniques in shipping. **W. W. Rice**, dean of the company's sales staff, has been appointed general sales manager. **Mrs. Julia Zachary Bowers**, formerly executive secretary to Mr. Henderson, has been named sales promotion manager. **W. Henry Pitman**, formerly in charge of sales in the northern territories, will now be field sales manager for the entire territory. **S. A. Rushin**, vice president, has been named vice president and general manager. **E. V. Griffith**, controller and credit manager, has been named secretary, and **Robert C. Harden**, purchasing assistant, has been elevated to the position of purchasing agent.

**Max B. Friedlander** has been appointed chief chemist by the **White-Stokes Company** of Chicago. Mr. Friedlander will be in charge of quality control for continuous improvement of the White-Stokes line of ingredients for the confectionery trade.

The Metropolitan Candy Broker's Association has scheduled its second annual **Confectionery and Allied Products Exhibit** at the Hotel New Yorker, October 23-26, New York. Last year 160 manufacturers exhibited. Information on this show is available from **Harry V. Schechter**, Box 181, Brooklyn, New York.

**A. E. Hillary**, chairman of the board of **Bramigk & Co., Ltd.**, of England, died recently. Mr. Hillary was managing director of a confectionery firm before taking over Bramigk in 1920. His son, **Brigadier J. B. Hillary**, the present managing director of Bramigk, is well known in this country through several trips here, and from attending several NCA conventions.

**Gregg International, Inc.**, announces that as of June first, 1954, it transfers the national representations of confectionery and food items to **Dalt International, Inc.** This includes representation of the products of **Karl Fazer** of Finland and **Marabou** of Sweden. The sales policies and representations throughout the United States will remain the same, and Dalt will use the same office space as Gregg, at 16 W. 19th St., New York City. Mr. Louis P. Alaimo, formerly with Gregg, has been named president of Dalt, and Mr. A. Urban Shirk, formerly the National Director of Sales for Gregg, is the Vice President in Charge of Sales for Dalt.



**6000 to 6500 lbs. per hour**  
of 6X powdered sugar is easily produced with the  
**SCHUTZ-O'NEILL Superfine PULVERIZER**

If you have need for constant high production of powdered sugar, by all means investigate the 28" Schutz-O'Neill Superfine Pulverizer. It easily turns out 6000 to 6500 lbs. per hour of 6X powdered sugar with uniform fineness, using a 75 H.P. motor. Carry granulated sugar in stock,—make fresh powdered sugar as needed.

**EXTRA EQUIPMENT:** Automatic Starch Feeder will thoroughly mix any desired percentage of starch with powdered sugar.

Write for information, state capacity desired.



**SCHUTZ-O'NEILL CO.**

329 Portland Ave., Minneapolis 15, Minn.

## CANDY EQUIPMENT PREVIEW

Published bi-monthly by

**THE MANUFACTURING CONFECTIONER  
PUBLISHING CO.**

418 NO. AUSTIN BLVD.

OAK PARK, ILLINOIS

*Publishers of*

THE MANUFACTURING CONFECTIONER

THE CANDY BUYER'S DIRECTORY

THE PURCHASING EXECUTIVES BLUE BOOK

**Publisher**

P. W. Allured

**Advertising Offices:**

OAK PARK, ILLINOIS

Allen R. Allured

418 No. Austin Blvd.—EUclid 6-5099

New York 36, N. Y.

James W. Allured

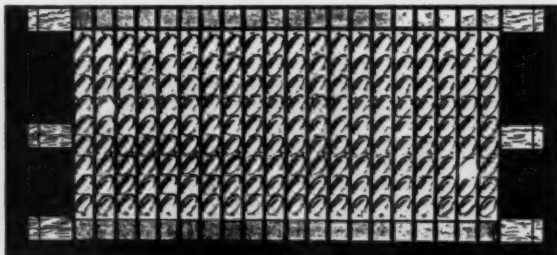
303 W. 42nd St.—CIRCLE 6-6456

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Confectioner Publishing Co.

**JULY**

Vol. 14, No. 4

**1954**



### ALUMINUM CANDY MOULDS

CHEAPEST, MOST PRACTICAL AND ECONOMICAL MOULD MADE

Now with a NEW FINISH  
which eliminates break-in time

**CINCINNATI ALUMINUM MOULD CO.**

Dept. M, 1834 Dana Ave., Cincinnati 7, Ohio



Bunte-Chase has developed a novel window display primarily for variety stores which not only features candy, but promotes the sale of sports and outdoor equipment. The nine pieces that make up this display may be used in small or large windows, or components may be used individually as spot displays. This is the first in a series of displays tailored for the use of specific types of retail outlets.

The Flavoring Extract Manufacturers' Association Golf Outing was the most popular yet held. The F. L. Beggs Memorial Cup was again won by Guy Bates who has now retired the cup. Low net was won by Louis Towt. The ladies' prizes were won by Mrs. F. J. Lueders for low gross and Mrs. D. C. Jenks for low net.

A New Antioxidant has been developed and successfully run the gauntlet of FDA inspection and approval. Various named BHT, DBPC, and other such meaningless terms, it is said to be as effective as the best on the market, and have the additional advantage of having a less noticeable taste and odor. It is available from the Eastman Chemical Products, Inc., the Chemical Division of Koppers Company, Inc. and W. J. Stange Co.

Louis Heidelberg, founder and president of the Heidelberg Confectionery Company, Philadelphia, died on March 13, 1954. He was in his 75th year. Mr. Heidelberg's son, Mark, who joined the company in 1936 and has been secretary-treasurer of it, succeeds his father as president.

### CODE DATERS

### NAME MARKERS

### PRICERS

Gummed Tape Printers  
For The Candy Industry

Write for information

**KIWI CODERS CORP.**

3504-06 N. Clark St., Chicago 13, Ill.

### CONVEYORS

Corrigan bulk dry sugar handling and storage systems convey sugar from unloading point to storage and from storage to production.

Improve production facilities  
Lower operation costs

**J. C. Corrigan Co., Inc.**

41 Norwood St., Boston 22, Mass.



**STANcase**  
STAINLESS STEEL  
**EQUIPMENT**

**STAINLESS STEEL  
DRUMS**

MODEL 30--30 GAL.  
MODEL 55--55 GAL.  
(Covers available)

**ECONOMY  
EQUIPMENT**

RUGGEDLY CONSTRUCTED FOR LIFE TIME WEAR.  
FULLY APPROVED BY HEALTH AUTHORITIES.

Manufactured by  
**The Standard Casing Co., Inc.**  
121 Spring St., New York 12, N. Y.

# Latini's

## LATEST LABOR SAVER

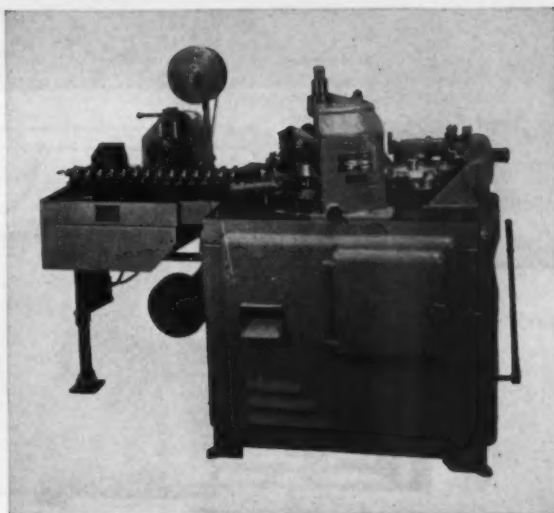
You can now make and wrap pops in one continuous operation—and they're not just pops—they're LATINI DIE POPS.

200 wrapped Die Pops per minute require only one operator: the spinner.

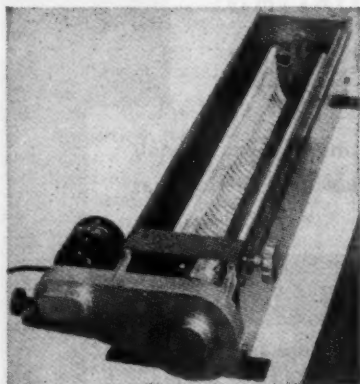
The wrapped pops go right through for cooling, then packing.

There is no handling, chipping, breaking, etc., which all means dollars and cents to you. In addition, the sandwich wrap saves cellophane—uses about 50% of other type wraps.

IT ALL ADDS UP TO PROFITS WITH A QUALITY ITEM.



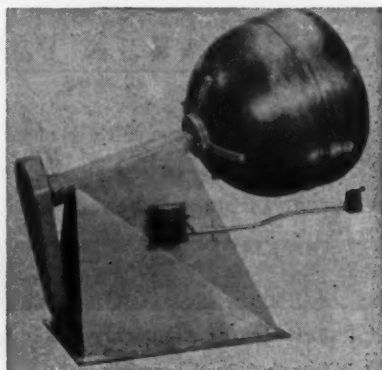
LATINI DIE POP MACHINE WITH WRAPPING ATTACHMENT



LATINI DECORATOR

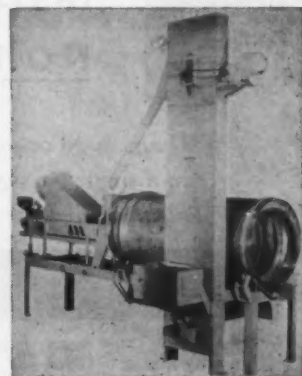
Saves Labor—eliminates from 2 to 6 strokers per enrober.

Versatile—variable speed drive, elevation control and 3 sets of decorating belts make a wide variety of markings.



LATINI REVOLVING PAN

Unusual Bowl shape permits 10 to 15% larger charges, alone paying for pan in a short time. Sanitary and sturdily built for a long silent life.



LATINI SUGAR SANDER

Guaranteed to properly sand the full output of a mogul! Enlarged steaming chamber. Noncorrosive metals wherever steam and sugar meet.

CHOCOLATE SPRAYING CO., INC., CHICAGO, ILLINOIS

Representative:

*John Sheffman, Inc.*

152 West 42nd Street

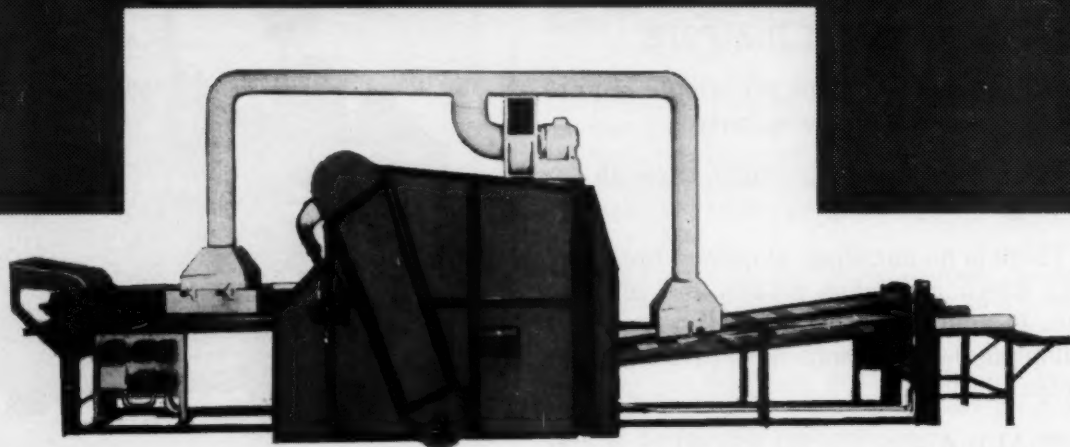
New York 36, N. Y.



# SANDBLAST

## THE WORLD'S PREMIER SUGAR SANDER

British designed and built • Capacity 25 to 40 lbs per minute



FROM 25 TO 40 LBS. PER MINUTE OUTPUT  
INVISIBLE STEAMING—PERFECT COATING  
NO LOOSE SUGAR IN PACKAGES

Gums, hard or soft jellies, lozenges—All are given a perfect coating of sugar crystals in a single passage through this machine. It is designed for *trouble free operation* at *high output* with *negligible attention* from anyone.

*We, the manufacturers and patentees of the SANDBLAST machine, have had a lot of experience supplying the U. S. market, and have imported a great deal of U. S. machinery into Europe. We strongly recommend this unit to our many American friends and assure them of our prompt attention to every enquiry. A note to us will bring a descriptive leaflet by return air mail.*

## BRAMIGK & CO. LTD.

Suppliers of Specialised Chocolate Cocoa and Confectionery Processing Equipment since 1872

MIKRO HOUSE • 15 CREECHURCH LANE • LONDON E.C.3

Cables: Bramigk, London

Telegrams: Bramigk, Fen, London

Telephone: London, Avenue 4822



# Candy Clinic

The Candy Clinic is conducted by one of the most experienced superintendents in the candy industry. Some samples represent a bona-fide purchase in the retail market. Other samples have been submitted by manufacturers desiring this impartial criticism of their candies, thus availing themselves of this valuable service to our subscribers. Any one of these samples may be yours. This series of frank criticisms on well-known branded candies, together with the practical "prescriptions" of our clinical expert, are exclusive features of The MANUFACTURING CONFECTIONER.

## Gums, Jellies and Undipped Bars

### Code 7A4 Assorted Chocolates 1 lb., \$1.20

(Sent in for analysis #4668)

Appearance of Package: Fair.  
Box: One layer type, square, printed in brown and buff.

Appearance of Box on Opening: Poor.

Number of Pieces:

Light Coated: 11.

Dark Coated: 13.

Bon Bons: 3.

Coatings: Dark & Light.

Colors: Good.

Gloss: None. Bloomed.

Strings: Poor.

Taste: Very cheap.

(Very greasy coatings; both badly bloom.)

Dark Coated Centers:

Dark Cream & Nuts: Good.

Buttercream & Nuts: Good.

Buttercream: Good.

Maple Nut Cream: Good.

Cordial Cherry: Good.

Jelly & Marshmallow: Good.

Coconut Cream: Good.

Light Coated Centers:

Cordial Cherry: Good.

Chocolate Cream & Nuts: Good.

Dark Cream & Nuts: Good.

Coconut Ting Ling: Good.

Chocolate Nut Caramel: Good.

Maple Nut Caramel: Good.

Buttercream: Good.

Bon Bons: Very hard and dry.

Assortment: Contained too many creams.

Remarks: Suggest coatings be checked as they are not up to the standard used in this priced chocolates. Bon bons need checking as they were too hard to eat. Box is too large for this assortment. Highly priced at \$1.20 the pound. Box was soiled on top. Suggest a cellulose wrapper.

### Code 7C4 Assorted Chocolates 1 lb., \$1.20

(Sent in for analysis #4670)

Appearance of Package: Fair.

Box: One layer type, square, printed in brown and buff.

Appearance of Box on Opening: Poor.  
4 pieces were broken.

Number of Pieces:

Dark Coated: 16.

Light Coated: 22.

Coatings: Dark & Light.

Colors: Good.

Gloss: Good.

Strings: Good.

Taste: Good.

Dark Coated Centers:

Lemon Cream: Not a good lemon flavor.

Cream: Could not identify flavor.

Maple Nut Cream: Flavor too strong.

Vanilla Caramel: Good.

Nougat: Good.

Hard Candy Ting Ling: Good.

Date: Good.

Nut Nougat: Good.

Chip: Good.

Chocolate Hard Candy Blossom: Good.

Mini Wafer: Good.

Pink Cream: Could not identify flavor.

Light Coated Centers:

Cordial Cherry: Good.

Vanilla Caramel: Good.

Peanut Butter Blossom: Good.

Caramallow: Poor marshmallow.

Chocolate Buttercream: Good.

Maple Nut Cream: Flavor too strong.

Nougat: Good.

Nut Crunch: Good.

Coconut Paste: Good.

Brazil: Good.

Buttercream: Good.

Filbert Cluster: Good.

Cashew Cluster: Good.

Peppermint Cream Wafer: Good.

Assortment: Good.

Remarks: The best assortment of chocolates at this price we have examined this year. Suggest some of the flavors be checked. Box is too large for this assortment. Top of box was soiled. Suggest a cellulose wrapper be used.

## Candy Clinic Schedule For the Year

JANUARY—Holiday Packages; Hard Candies

FEBRUARY—Chewy Candies; Caramels; Brittles

MARCH—One-Pound Boxes Assorted Chocolates up to \$1.00

APRIL—\$1.00 and up Chocolates; Solid Chocolate Bars

MAY—Easter Candies and Packages; Moulded Goods

JUNE—Marshmallows; Fudge

JULY—Gums; Jellies; Undipped Bars

AUGUST—Summer Candies and Packages

SEPTEMBER—Bar Goods; 5c Numbers

OCTOBER—Salted Nuts; 10c-15c-25c Packages

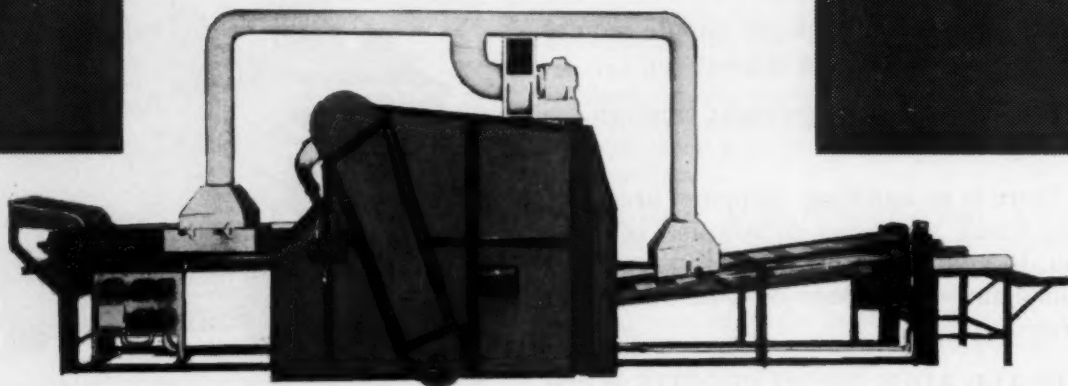
NOVEMBER—Cordial Cherries; Panned Goods; 1c Pieces

DECEMBER—Best Packages and Items of Each Type Considered During Year; Special Packages; New Packages

# SANFAST

## THE WORLD'S PREMIER SUGAR SANDER

British designed and built • Capacity 25 to 40 lbs per minute



**FROM 25 TO 40 LBS. PER MINUTE OUTPUT**  
**INVISIBLE STEAMING — PERFECT COATING**  
**NO LOOSE SUGAR IN PACKAGES**

Gums, hard or soft jellies, lozenges—All are given a perfect coating of sugar crystals in a single passage through this machine. It is designed for *trouble free operation* at high output with negligible attention from anyone.

*We, the manufacturers and patentees of the SANFAST machine, have had a lot of experience supplying the U. S. market, and have imported a great deal of U. S. machinery into Europe. We strongly recommend this unit to our many American friends and assure them of our prompt attention to every enquiry. A note to us will bring a descriptive leaflet by return air mail.*

## BRAMIGK & CO. LTD.

Suppliers of Specialised Chocolate Cocoa and Confectionery Processing Equipment since 1872

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### Code 7A4 Assorted Chocolates 1 lb., \$1.20

(Sent in for analysis #4668)

Appearance of Package: Fair.

Box: One layer type, square, printed in brown and buff.

Appearance of Box on Opening: Poor.

Number of Pieces:

Light Coated: 11.

Dark Coated: 13.

Bon Bons: 3.

Coatings: Dark & Light.

Colors: Good.

Gloss: None. Bloomed.

Strings: Poor.

Taste: Very cheap.

(Very greasy coatings; both badly bloom.)

Dark Coated Centers:

Dark Cream & Nuts: Good.

Buttercream & Nuts: Good.

Buttercream: Good.

Maple Nut Cream: Good.

Cordial Cherry: Good.

Jelly & Marshmallow: Good.

Coconut Cream: Good.

Light Coated Centers:

Cordial Cherry: Good.

Chocolate Cream & Nuts: Good.

Dark Cream & Nuts: Good.

Coconut Ting Ling: Good.

Chocolate Nut Caramel: Good.

Maple Nut Caramel: Good.

Buttercream: Good.

Bon Bons: Very hard and dry.

Assortment: Contained too many creams.

Remarks: Suggest coatings be checked as they are not up to the standard used in this priced chocolates. Bon bons need checking as they were too hard to eat. Box is too large for this assortment. Highly priced at \$1.20 the pound. Box was soiled on top. Suggest a cellulose wrapper.

### Code 7C4 Assorted Chocolates 1 lb., \$1.20

(Sent in for analysis #4670)

Appearance of Package: Fair.

Box: One layer type, square, printed in brown and buff.

Appearance of Box on Opening: Poor.  
4 pieces were broken.

Number of Pieces:

Dark Coated: 16.

Light Coated: 22.

Coatings: Dark & Light.

Colors: Good.

Gloss: Good.

Strings: Good.

Taste: Good.

Dark Coated Centers:

Lemon Cream: Not a good lemon flavor.

Cream: Could not identify flavor.

Maple Nut Cream: Flavor too strong.

Vanilla Caramel: Good.

Nougat: Good.

Hard Candy Ting Ling: Good.

Date: Good.

Nut Nougat: Good.

Chip: Good.

Chocolate Hard Candy Blossom: Good.

Mint Wafer: Good.

Pink Cream: Could not identify flavor.

Light Coated Centers:

Cordial Cherry: Good.

Vanilla Caramel: Good.

Peanut Butter Blossom: Good.

Caramallow: Poor marshmallow.

Chocolate Buttercream: Good.

Maple Nut Cream: Flavor too strong.

Nougat: Good.

Nut Crunch: Good.

Coconut Paste: Good.

Brazil: Good.

Buttercream: Good.

Filbert Cluster: Good.

Cashew Cluster: Good.

Peppermint Cream Wafer: Good.

Assortment: Good.

Remarks: The best assortment of chocolates at this price we have examined this year. Suggest some of the flavors be checked. Box is too large for this assortment. Top of box was soiled. Suggest a cellulose wrapper be used.

## Candy Clinic Schedule For the Year

JANUARY—Holiday Packages; Hard Candies

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JUNE—Marshmallows; Fudge

JULY—Gums; Jellies; Undipped Bars

AUGUST—Summer Candies and Packages

SEPTEMBER—Bar Goods; 5c Numbers

OCTOBER—Salted Nuts; 10c-15c-25c Packages

NOVEMBER—Cordial Cherries; Panned Goods; 1c Pieces

DECEMBER—Best Packages and Items of Each Type Considered During Year; Special Packages; New Packages

**Code 7B4****Assorted Chocolates**

1 lb., \$1.20

(Sent in for analysis #4669)

**Appearance of Package:** Fair.**Box:** One layer type, square, printed in brown and buff.**Appearance of Box on Opening:** Fair. 3 broken pieces.**Number of Pieces:**

Light Coated: 23.

Dark Coated: 7.

**Coatings:** Dark & Light.**Colors:** Good.**Gloss:** Good.**Strings:** Good.**Taste:** Good.**Dark Coated Centers:**

Nougat: Poor.

Whipped Cream: Good.

Pink Cream: Could not identify flavor.

Jelly &amp; Marshmallow in Layers: Could not identify flavor.

Coconut Cream: Good.

Lemon Cream: Not a good lemon flavor.

**Light Coated Centers:**

Chip: Good.

Hard Candy Ting Ling: Good.

Whipped Cream: Good.

Coconut Cream: Good.

Nut Crunch: Good.

Cordial Cherry: Good.

Chocolate Cream: Good.

**Dark Cream:** Could not identify flavor.**Chocolate Paste:** Good.**Vanilla Caramel:** Good.**Nougat:** Poor.**Cordial Pineapple:** Good.**Date:** Good.**Nut Clusters:** Good.**Assortment:** Good.**Remarks:** Box is too large for this assortment. Suggest nougat be checked as it is a very cheap piece. Some of the flavors need checking. Box was soiled on top. Suggest a cellulose wrapper.**Code 7D4****Assorted Chocolates**

1 lb., 79c

(Sent in for analysis #4667)

**Appearance of Package:** Good.**Box:** Two layer type, full telescope, white glazed paper top, printed in blue, red, brown and green. Name in blue. Cellulose wrapper.**Appearance of Box on Opening:** Good.**Number of Pieces:**

Dark Coated: 35.

Foiled: 2.

Cellulose Wrapped Caramels: 2.

Jordan Almond: 1.

**Coating:** Dark.**Color:** Good.**Gloss:** Good.**Strings:** Good.**Taste:** Good for this priced chocolates.**Centers:**

Vanilla Caramel: Good.

Chocolate Cream: Good.

Maple Cream: Cream good, flavor poor.

Lemon Cream: Cream good, flavor fair.

Pink Cream: Could not identify flavor.

Taffy: Not a good flavor and stuck to the teeth.

Mint Cream: Good.

Vanilla Cream: Good.

Orange Cream: Not a good orange flavor.

Nougat: Good.

Jelly: Could not identify flavor.

Brazil: Good.

Nut Taffy Foiled: Good.

Wrapped Caramel: Hard and tough.

Jordan Almond: Good.

**Assortment:** Fair.**Remarks:** Too many creams for a one pound assortment. Some of the flavors need checking up as they are not up to standard.**Code 7E4****Coconut Pattie**

2 ozs., 10c

(Sent in for analysis #4673)

**Wrapper:** Glassine bag printed in brown.**Appearance of Pattie:** See remarks.**Coating:** Dark: Good.**Center:****Color:** Good.

In its distinguished Chocolate Coatings, Ambrosia has preserved a tantalizing taste, delicate as the blossoms of the cocoa tree, yet rich as the ripened brown beans.

**CHOCOLATE COATINGS**

We will be pleased to have your request for samples and information. Address: Dept. A 1

**AMBROSIA CHOCOLATE COMPANY**  
MILWAUKEE, WISCONSIN

Celebrating 60 Quality Years



Texture: Good.

Taste: Good.

Remarks: The best coconut pattie we have examined this year. Suggest a foil wrapper to improve the appearance of the pattie.

#### Code 7F4

##### Assorted Gums

11 ozs., 80c

(Purchased in a department store, Chicago, Ill.)

Appearance of Package: Good.

Container: Round acetate box, gold printed seal in the center.

Gums:

Colors: Good.

Crystal: Good.

Texture: Good.

Flavors: Good.

Lemon Slices:

Color: Good.

Texture: Good.

Sugaring: Good.

Flavor: Good.

Opera Gums:

Colors: Good.

Crystal: Good.

Texture: Good.

Flavor: Good.

Gum & Marshmallow in Layers:

Colors: Good.

Crystal: Good.

Texture: Good.

Flavors: Good.

Remarks: The best box of assorted gums at this price we have examined this year. Well packed and attractive looking package.

#### Code 7G4

##### Assorted Spiced Opera Gums

14 ozs., 25c

Appearance of Package: Fair.

Container: Polyethylene bag, paper seal on top printed in red. Name in white.

Gums:

Colors: Good.

Sugaring: Poor.

Texture: Good.

Flavors: Fair.

Remarks: At this price we cannot expect too much. Suggest flavors be checked as they are not up to the standard used in other pieces of this kind we have examined.

#### Code 7H4

##### Toasted Marshmallows

7 ozs., 17c

(Sent in for analysis #4671)

Appearance of Package: Good.

Container: Cellulose bag printed in yellow, brown and white.

Marshmallows:

Coconut: Good.

Marshmallow:

Color: Good.

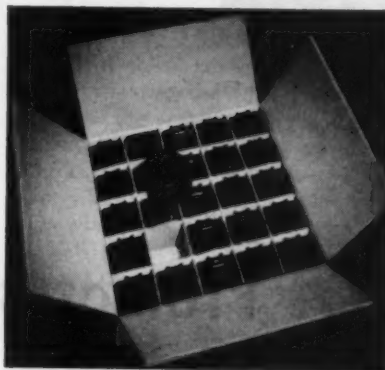
Texture: Tough.

Taste: Good.

Remarks: A good looking package. Suggest marshmallow formula be checked as marshmallow is too tough. A marshmallow is not good eating when tough and dry.



## CREATE INTEREST



## SHIP WITH SAVINGS



## COLLECT SALES DIVIDENDS

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Write for free booklet "How to Prepak in Corrugated Boxes."  
Hinde & Dauch, Sandusky 12, Ohio





Johnny Klein, who received one of the Milky Way Gold Star Awards as one of the ten most talented children, gets his award from Mr. Victor Gies

The Milky Way Home Run Award, given to any Little League player who hits a home run in league play, was presented several hundred times last year.



## How Mars Promotes Public Relations

by STANLEY E. ALLURED

Editor, *The Manufacturing Confectioner*



Admiring the Silver Anvil Award for outstanding public relations are Ralph Ellis, Leo Burnett Co., Mars advertising agency, James Fleming, Mars' public relations director, and Victor Gies, vice president of Mars.

MARS, INC., won the Silver Anvil trophy for outstanding Public Relations in the field of Distribution and Marketing. This award, the highest in this category bestowed by the American Public Relations Association, was given for an effective and well balanced program carried out during 1953.

Mr. James R. Fleming, Director of Public Relations for Mars, organized and directed this program with its aim primarily directed at two very important segments of the population, children and the housewife. The three phases of this program were:

1. Milky Way Home Run Award. This trophy was awarded, via the Little League organizations, to any young ballplayer who hit a home run during league play. Several hundred of these awards were given out, and the letters of appreciation from the winners of this award are ample testimony of the effectiveness of this award in building goodwill for Mars.



This mat, and the recipe that was distributed with it, appeared in 243 newspapers with over one million circulation. It illustrates how effective an aggressive and intelligent low-cost public relations program can be. Several of these mat promotions are sent out each year, reaching millions of housewives on the food pages of their newspapers.

2. Milky Way Gold Star Award. This award is presented to the ten most talented children in the entertainment world, as determined by an extensive survey among disk jockeys, newspaper columnists, press agents, and others in daily contact with entertainers. This award

brings the attention of the entertainment world to Mars, in addition to its effect in emphasizing the importance of children to Mars.

3. Newspaper Mat Service. This service is developed by a commercial testing kitchen which develops recipes and table decorations for the home using products of Mars. Mats for illustration and recipes are sent to hundreds of newspapers, to the attention of the food editor, on a regular basis throughout the country. This is the method of getting the housewife interested in candy as a food, and in Mars' candy in particular.

The information on the mat which is illustrated indicates the kind of response and influence which this service generates. This particular feature was used by 243 newspapers in 38 states, with a combined circulation of 1,018,000 families. The average circulation of these newspapers is 4,192, indicating that it is primarily the small town weeklies and dailies that use this service. The significance of this coverage is that these are just the type of families that are the hardest to reach through advertising, particularly since the major part of Mars budget is devoted to TV which has poor penetration into rural areas.

This progressive and effective work of public relations does the entire industry a lot of good, as it keeps candy in the spotlight as a delicious food, and as a reward to the youngster for a job well done. What better results could a public relations program for candy achieve?

**M E R C K E N S**

*Makers of Fine Chocolate and Cocoa*

**MERCKENS CHOCOLATE COMPANY, INC.**

155 Great Arrow Avenue, Buffalo 7, New York

BRANCHES AND WAREHOUSE STOCKS IN

BOSTON, NEW YORK, CHICAGO, LOS ANGELES, OAKLAND, SALT LAKE CITY, SEATTLE

## Highlights of the NCA & AACT Conventions

THE NCA convention opened with a joint AACT and NCA technical meeting which was the most successful of the convention. While only about 40 reservations were received, over one hundred came for the eight o'clock breakfast and stayed for the all-morning technical session. This was the first attempt at a technical meeting of the AACT at their annual meetings, which had been exclusively business meetings during the past few years. The response to this meeting indicates that a technical session will become a permanent part of the annual meetings of the AACT.

### AACT Annual Meeting

After the technical meetings were finished at noon, an AACT luncheon was held, during which the Stroud Jordan Award was made to Justin J. Alikonis, president of the AACT for the past year. The annual business meeting convened after the luncheon and the following officers were elected: Norman W. Kempf, Walter Baker Division, president; Vincent R. Ciccone, Charms Company, 1st vice president; Otto Windt, E. J. Brach & Sons, 2nd vice president; Edward W. Meeker, The American Sugar Refining Company, secretary-treasurer; and Hans F. Dresel, Felton Chemical Company, assistant secretary. Councilors-at-Large elected were Samuel Goldstein, Loft Candy Corporation, William Zuckerman, Felton Chemical Company, and C. R. Kroekel, Kroekel-Oetinger, Inc. for one year terms, and Charles F. Supplee, Frantz Candies, Inc., Otto Glazer, Dairy Maid Confectionery Company, and Edward N. Heinz Jr., Food Materials Corporation, for two year terms.

### Production Sessions

Two sessions, one on Monday morning, a joint meeting sponsored by NCA and AACT, and the customary Forum on Wednesday night, provided production and technical information of high caliber. Both sessions were well attended.

### London Cocoa Conference

*Norman W. Kempf, Walter Baker Chocolate and Cocoa Div., General Foods Corp.*

The deterioration in quality of fermented cacao has resulted from harvesting procedures in Brazil and Africa. Pod collection at lengthening intervals results in the gathering of over-ripe, ripe and under-ripe beans. European chocolate manufacturers desire American co-operation in the establishment of quality standards. The relationship between the anthocyanin content and the degree of fermentation may be the basis of standards. Jungle expeditions to find cocoas resistant to Witches' broom disease and plant breeding tests have been undertaken.

### Antioxidants

*Dr. Lloyd A. Hall, The Griffith Laboratories, Inc.*

Rancidity is objectionable on taste and nutritional grounds. Oxidative rancidity is retarded by antioxidants which must be non-toxic. The maximum limit allowable in foods is 0.02%. BHA and BHT (approval expected shortly) have 'carry through' properties. Propyl gallate gives long shelf-life. A combination of antioxidants gives the best results.

### Emulsifying Agents

*Carl R. Piowaty, The Emulsol Corp.*

Emulsifiers were divided into four groups and discussed as: (1) foam formers—egg albumen, gelatin, soy and whey proteins, (2) gel producers—agar, gum, Irish moss, and starch, (3) thickeners—same as listed in (2), and (4) true emulsifiers—mono and di-glycerides, lecithin, and the synthetics (sorbitol derivatives). The latter are listed in some QM specifications.

### Humectants

*H. B. Cosler, Quartermaster Food and Container Institute*

Three nutritive products, glycerol, propylene glycol, and sorbitol, meet the definition of a humectant. Sorbitol has proven equal to or better



than glycerol as a humectant. Glycerol fluctuates in price and is a critical material in wartime when rations are used in large quantities. Propylene glycol has less than half the nutritive value of glycerol or sorbitol. It seems less efficient as a humectant than either glycerol or sorbitol.

Comparative data on these three humectants in candy is lacking. It is quite possible that for certain candies one might be more suitable either physically or economically, than the others. This can only be determined by actual test.

#### **Facts About Sugar**

*Dr. L. F. Martin, SRRL, U.S.D.A.*

Sugar is altered chemically in the processes of making most types of candy. When pure sugar, or a mixture of sugars resulting from inversion and addition of corn syrup, is cooked to high temperatures and low moisture contents more profound changes than simple inversion are certain to occur. The exact extent to which the expected reactions take place under actual candy production conditions has never been determined. The highest purity of ingredients is required for making hard candies and other all-sugar types, particularly when high cooking temperatures are reached. Extensive degradation and reaction of the sugar with other ingredients is desirable in producing caramels. For many types of candy less highly refined sugars should prove satisfactory and would be more economical to use. A systematic grading of sugars for their suitability in the manufacture of each type of candy would make a practical research program.

#### **Georgia Experiment Station Report**

*Bob McCormack, Jr., Bob's Candy & Peanut Co.*

The facilities of the Foods and Processing Division, headed by Dr. Woodruff, were described. An experiment, "Effect of Packaging and Storing Temperatures on Chocolate Coated Assorted Candies," recently completed, showed that the chief problems encountered were the occurrence of sugar bloom, fat bloom, and the cracking of individual pieces of candy. During six months storage, sugar bloom was effectively controlled in boxes of chocolates over-wrapped with saran, moistureproof cellophane, polyethylene and aluminum foil, but condensation occurred on those boxes wrapped in glassine. Five conclusions reached in regard to the occurrence of fat bloom were: (1) it was reduced but not prevented by refrigeration, (2) it increases slightly with the time of storage, (3) it was not greatly influenced by the method of packaging, (4) it greatly increased in chocolates having centers high in fat, and (5) it was little affected by the color of the chocolate coating. Coatings of certain types of candies cracked when stored at 0 F. These were, in order of susceptibility, spun candy chips, nuts, brittle, toffee and creams. Cracking was related entirely to the types of centers and storage temperatures and not to the types of package and length of storage.

#### **PMCA Candy Research Projects**

*C. R. Kroekel, Kroekel-Oettinger, Inc.*

A resume of research activities at Lehigh was presented. The PMCA expects to have a full-time director of research at Franklin and Marshall College.

#### **Developments in Food Equipment**

*Dr. Milton E. Parker, Illinois Institute of Technology*

Various types of electromagnetic radiations applied to food processing include (1) sonic and ultrasonic vibrations, (2) radio waves utilized in the dielectric, induction and radar heating of foods, (3) infrared radiations, (4) ultraviolet radiations, (5) X-rays (gamma rays), and (6) cathode rays (beta rays). Infrared heating offers the greatest prospect of early interest to the confectionery industry. This coupled with convection heating, as in an oven or roaster, would seem to have definite advantages in certain types of cooking and roasting. The use of infrared heat for drying food materials has led to some disappointing results. This is because its penetrating powers are limited. These limited penetrating powers are advantageous when it means high surface heating, obviously of merit in roasting. Conventional means of heat processing alter the flavor, texture and color of many foods. These changes have become acceptable. While awaiting futuristic forms of food preparation, consideration should be given towards making the best possible use of current types of equipment.

#### **Developments in Packaging Materials**

*Frank J. Rubinate, Quartermaster Food and Container Institute*

Polyethylene of greater transparency is now available. No one packaging material is a cure-all for problems. Combinations of materials offer great promise. The QM wants products to stand up for two years. It considers what industry can do before setting up regulations. Packaging can sometimes be done at the same or lower costs than experienced in industrial activities. It was found that a combination wrap composed of thin (1 mil) aluminum foil polyethylene coated and backed with 25-lb. sulfite paper gave better protection—less odor flavor moisture transfer, and better shelf life for the 5-in-1 Ration at a lower cost than the heavy foil previously used.

#### **Responsibility of Candy Technologist Panel**

*Chairman E. W. Meeker, American Sugar Refining Co.*

The term, candy technologist, was defined.

#### **Role of Candy Technologist**

*Victor L. Bump, The D. L. Clark Co.*

Diversification of activities such as (1) quality control through precise measurements, (2) evaluation of products through flavor panels, (3) the testing of packages for product protection, (4) studies of process changes, (5) developments of new products, and (6) service to the confectionery industry comprise the role of the candy technologist.

### Quality Control

*N. J. Peterson, W. F. Schrafft & Sons Corp.*

Raw materials and formulas must be constantly supervised. Standards must be maintained. Weights of containers and batch yields must be checked continually.

### Sanitation

*Dr. Charles E. Rimpila, E. J. Brach & Sons*

The candy technologist should be familiar with local, State and Federal food regulations. He should be acquainted with sanitation agents and methods of handling them safely.

### Can Management Afford to be Without a Candy Technologist?

*A. Rodney Murray, Minter Bros., Inc.*

Summarizing the other talks, the candy technologist has proved his value. He is a good will ambassador and should be responsible to top management.

### Instrument Techniques and Mechanized Processing

*Lloyd E. Slater, Food Engineering*

How instrumentation has advanced continuous processing of candy bars was visually demonstrated through slides. Dimension control of bars to 0.003 inches in thickness has been obtained. A variation of 1/64 inch means a cost of 1¢ per box. Humidity and temperature of air in the cooling tunnels are controlled precisely by electronic instruments. Taste and appearance are nebulous factors which may sometimes be instrument controlled, e.g., the continuous pH control used in cream neutralizing (dairy) plants. The electric hygrometer, protected by a permeable membrane, may be useful in determining the moisture content of candy. This instrument has been used successfully in the grain industry. Electrical conductivity may be useful in controlling the moisture content of liquids. Corn flakes are inspected for color by the electric eye and products not matching the standard are discarded. Such devices and others such as ultrasonics may become the working tools for the candy plant of tomorrow.

Many questions from the floor were answered by the Panels. Information gleaned from these follows.

Difficulties may arise in the packaging, shipping and storage of sugars less pure than granulated. However, Turbinado and raw sugars are being successfully shipped in bulk.

Candy flavors are often unstable, e.g., orange oil polymerizes and a terpeny taste results. Antioxidants help prevent this.

BHT will be lower in price than BHA.

It is necessary to experiment with various humectants in order to find the best one suited to your product.

Induction heating may be applied to continuous cooking although the economics have not yet been worked out.

If the fat you buy contains antioxidant do not add more because it is uneconomic to do so and

there is danger of exceeding the allowable limit.

Compound coatings pose no problems with hard centers such as nougat. Care is necessary in using the compound coatings on centers of high moisture content.

Spans and Tweens are better when used together. These materials are nutritive.

Do not blend various compound coatings and do not add chocolate to them.

Oil soluble colors fade rapidly. An emulsion of water soluble colors is satisfactory for coloring these coatings.

Compound coatings are run at 15 to 20 degrees higher than chocolate coatings. Centers should be 5 to 10 degrees warmer for compound coatings than for chocolate coatings. Compound coatings crack when the centers are too cold when coated.

**The Sugar Industry Educational Advertising Program** was explained by Ernest W. Greene, president of the Sugar Association, Incorporated. Mr. Greene explained the research that was carried out to determine the place of sugar in the normal diet, and its value to those persons who wished to reduce their weight. It was emphasized that this research was the basis of their advertising, and that all facts mentioned in their promotion were backed up with scientific findings at leading medical research institutions. He made a plea that the candy industry carry the word of this advertising throughout the country, as a basis of self-help, and described the candy box insert that the association was producing for that purpose.

"Planning for Profit" was the theme of a panel discussion moderated by Charles L. Smessaert of the Walter H. Johnson Candy Co. The panel was made up of Donald S. Farquharson, Controller, Mars, Inc.; Arthur Bridge, Controller, E. J. Brach & Sons; Richard J. Alberts, controller, Walter H. Johnson Candy Co. and J. Cliff Walsh, secretary-treasurer, American Licorice Company. This panel discussed the problem of forecasting profits by forecasting sales figures and raw material costs. The panel discussed this problem from the standpoint of both the large and small manufacturer.

-the end

# HOOTON

## COMPOUND COATINGS (COCOA BASE)

Both dark and milk coatings. Appearance, taste and stability are very close to chocolate coatings. Tell us to send tasting samples of these quality coatings with interesting quotations.

**HOOTON CHOCOLATE COMPANY**  
NEWARK 7, NEW JERSEY

# Manufacturing Methods and Formulas for

## Nut Candies

*Continued from May, 1954  
The Manufacturing Confectioner*



Walter Richmond, the author of this article, is plant superintendent at the Norris Candy Company, Atlanta, Ga. He is well known to this industry through his book, "Candy Production Methods and Formulas," published by The Manufacturing Confectioner

Publishing Company. This article is a chapter from Mr. Richmond's new book, to be published this summer. This will be primarily made up of formulas and methods for the manufacture of high grade confections, such as are produced by retail confectioners and high grade wholesale package goods houses.

### Formula # 308 COCONUT BRITTLE

Small Batch	Ingredients	Large Batch
5 lbs.	Granulated sugar	20 lbs.
3 lbs.	Corn syrup	12 lbs.
1½ lbs.	Medium shred desiccated coconut	6 lbs.
2 ozs.	Bicarbonate of soda	8 ozs.
¼ oz.	Salt	1 oz.
1½ pts.	Water	3 qts.

**PROCEDURE.** Sprinkle medium shred coconut on an oiled cooling slab. Place sugar, corn syrup and water in cooking kettle. Cook to 290 degrees Fahr. Add coconut. Stir until coconut begins to turn brown. Set kettle off of furnace. Let batch cool for about one half minute. Add salt and bicarbonate of soda. Stir until soda is well mixed into the batch and the batch puffs up. When batch is well puffed pour onto the slab containing the shred coconut. Spread to a thickness of about ¾ inch. Cover top surface of brittle with medium shred coconut. Imbed coconut into the batch by rolling with a rolling pin. Cut into 1¼ inch squares with a butcher knife or with a roller knife. Break squares apart. Allow to cool and place in wax paper lined stock boxes until ready to be sold.

**REMARKS.** This brittle has a good crunchy texture and the cooking of the batch until the coconut begins to turn to a golden brown color develops a very pleasing flavor.

If so desired, the brittle can be handled the same as peanut brittle instead of cutting it into squares.

### Formula # 309 ALMOND BRITTLE

Small Batch	Ingredients	Large Batch
5 lbs.	Granulated sugar	15 lbs.
3 lbs.	Corn syrup	9 lbs.
¾ lbs.	Small whole almonds or halves	9¾ lbs.
2 ozs.	Fresh dairy butter	6 ozs.
½ oz.	Bicarbonate of soda	1½ ozs.
¼ oz.	Salt	¾ ozs.
1½ pts.	Water	2¼ qts.

**PROCEDURE.** Place sugar, corn syrup and water in cooking kettle. Cook to 250 degrees Fahr. Add almonds and cook until almonds are light brown in color and are well roasted. Add butter just before the batch has finished cooking. Remove kettle from furnace. Allow to cool for about ½ minute or less. Add salt and soda. Stir until soda is well mixed into the batch and the batch puffs up. Pour onto a well oiled cooling slab. Quickly spread the batch. When the batch is firm enough to handle cut into 2 or 3 pieces. Turn pieces over. When top surface of the batch has softened up stretch the brittle so that the finished product will be thin. Allow to cool and pack into well covered containers until ready to be sold.

**REMARKS.** This formula produces a fine flavored brittle if the nuts are not over-roasted. A smaller percentage of soda



is used in almond brittle that is used in peanut brittle. The brittle will be a little more clear looking and not quite as crunchy as peanut brittle.

### Formula # 310 ALMOND BUTTER CRISP

Small Batch	Ingredients	Large Batch
4 lbs.	Granulated sugar	12 lbs.
3½ lbs.	Corn syrup	10½ lbs.
2 lbs.	Raw chopped almonds	6 lbs.
1 lb.	Fresh dairy butter	3 lbs.
1¼ ozs.	Bicarbonate of soda	3¾ ozs.
¾ oz.	Salt	2¼ ozs.
¼ oz.	Lecithin	¾ oz.
1½ pts.	Water	2¼ qts.

**PROCEDURE.** Place sugar, corn syrup and water in cooking kettle. Bring to boil and add almonds. Cook to 290 degrees Fahr. Add butter that has been melted and mixed with the lecithin. Re-cook the batch to 290 degrees. Set kettle off of the furnace and add salt and soda. Stir until soda is mixed into the batch and the batch is well puffed up. Pour onto well oiled cooling slab. Spread to desired thickness. Cut into suitable size squares and coat with chocolate.

**REMARKS.** While this formula contains a fairly larger percentage of butter it can not be classed as a true butter crunch or toffee.

The brittle can be either coated with milk chocolate or can be sold as an uncoated nut confection. The brittle has a good crunchy texture and a fine eating quality.

### Formula # 311 BLACK WALNUT BRITTLE

Small Batch	Ingredients	Large Batch
5 lbs.	Granulated sugar	15 lbs.
3 lbs.	Corn syrup	9 lbs.
2 lbs.	Western Black Walnuts (see remarks)	6 lbs.
2 lbs.	Roaster Cashew pieces	6 lbs.
2 ozs.	Fresh dairy butter	6 ozs.
2 ozs.	Bicarbonate of soda	6 ozs.
¾ oz.	Salt	¾ oz.
1½ pts.	Water	2¼ qts.

**PROCEDURE.** Place sugar, corn syrup and water in cooking kettle. Cook to 290 degrees Fahr. Add butter and cook to 300-305 degrees. Add cashew nuts. Stir until nuts are warm. Set kettle off of furnace. Add salt. Let *small batch* cool for about 2 minutes or cool *large batch* for 5 minutes. Add black walnuts and soda. Stir until soda is well mixed into the batch and the batch puffs up. Pour onto oiled cooling slab. Quickly spread the batch. When the batch is firm enough to handle, cut into 2 or 3 pieces. Turn pieces over. When top surface has softened up, stretch the brittle so that the finished product will be thin. Allow to cool and pack into well covered containers until ready to be sold.

**REMARKS.** Black walnut brittle is a very tasty confection when properly made. Black walnuts have a strong flavor, especially the nuts from the Eastern States. The use of Western black walnuts, with their milder flavor, make a brittle

with just enough black walnut flavor to be pleasing. Black walnuts are about the strongest flavored nuts and the black walnut flavor will predominate over the mild flavored cashew nut.

The batch was allowed to cool before adding the black walnuts for the reason that the oil of the black walnuts would break down some of the aerating action of the soda if the nuts and soda were added to a hot batch of syrup.

### Formula # 312 ASSORTED NUT BRITTLE

Small Batch	Ingredients	Large Batch
5 lbs.	Granulated sugar	15 lbs.
3 lbs.	Corn syrup	9 lbs.
2 ozs.	Fresh dairy butter	6 ozs.
2 ozs.	Bicarbonate of soda	6 ozs.
¼ oz.	Salt	¾ oz.
½ lb.	Black walnut pieces	1½ lbs.
¾ lb.	English walnut pieces	2½ lbs.
¾ lb.	Roasted cashew pieces	2½ lbs.
½ lb.	Small almonds	1½ lbs.
1½ pts.	Water	2¼ qts.

**PROCEDURE.** Place sugar, corn syrup and water in cooking kettle. Cook to 250 degrees Fahr. Add raw almonds. Cook to 290 degrees and add butter. Cook to 300-305 degrees or until almonds are roasted (do not overroast almonds). Add walnuts and cashew nuts. Stir nuts into the batch and set kettle off of the furnace. Add salt. Let *small batch* cool for about 2 minutes or cool *large batch* for about 5 minutes. Add black walnuts and soda. Stir until the soda is well mixed into the batch and the batch puffs up. Pour onto oiled cooling slab. Quickly spread the batch. When the batch is firm enough to handle, cut into 2 or 3 pieces. Turn pieces over. When top surface has softened up, stretch the brittle so that the finished product will be thin. Allow to cool and pack into well covered containers.

**REMARKS.** This brittle with a combination of nut-meats has a very pleasing flavor and a good crunchy texture.

### Formula # 313 ENGLISH NUT KRUNCH Exceptional Flavor

Small Batch	Ingredients	Large Batch
3 lbs.	White granulated sugar	9 lbs.
4 lbs.	Yellow C sugar # 10	12 lbs.
1½ lbs.	Corn syrup	4½ lbs.
1½ lbs.	Fresh dairy butter	4½ lbs.
11 ozs.	30% dairy cream	1 qt.
1½ lbs.	Raw almonds (small)	4½ lbs.
¾ level teaspoon	Cream of tartar	2 level teaspoons
1 level teaspoon	Ground gelatine	2 heaping teaspoons
½ oz.	Bicarbonate of soda	1½ ozs.
½ oz.	Roman punch flavor	1½ ozs.
4 drops	Imitation raspberry flavor	12 drops
½ oz.	Vanilla flavor	1½ ozs.
1 qt.	Water	3 qts.

**PROCEDURE.** Sprinkle cooling slab liberally with ground pecans. Place yellow C sugar and water in cooking kettle.

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FLAVORS!**

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**ANN, BUSLEE & WOLFE, INC.**

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Terr.: New York State

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Contact Wholesale Groceries, Candy  
Jobbers and National Chains  
Terr.: Va., W. Va., Eastern Tenn.,  
and Eastern Kentucky

**JIM CHAMBERS**  
Candy Broker  
84 Peachtree Street  
ATLANTA, GEORGIA  
Terr.: Ga., Ala., and Fla.

**WM. E. HARRELSON**  
Candy & Allied Lines  
5308 Tuckahoe Ave.—Phone 44280  
RICHMOND 21, VIRGINIA  
Terr.: W. Va., N. & S. Car.

**ROY E. RANDALL CO.**  
Manufacturers' Representative  
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COLUMBIA 1, SO. CAROLINA  
Terr.: No. & So. Carolina  
Over 25 years in area

**SAMUEL SMITH**  
2500 Patterson Ave. Phone 22318  
Manufacturers' Representative  
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Terr.: Virginia, N. Carolina,  
S. Carolina

## East No. Central States

**BERNARD B. HIRSCH**  
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MILWAUKEE 11, WISCONSIN  
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cago), Mich. (Upper Penn.)

**H. K. BEALL & CO.**  
308 W. Washington St.  
CHICAGO 6, ILLINOIS  
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Territory: Illinois, Indiana,  
Wisconsin  
25 years in the Candy Business

## West So. Central States

**JAMES A. WEAR & SON**  
P. O. Box 27  
BALLINGER, TEXAS  
Territory: Texas

## Mountain States

**JERRY HIRSCH**  
Manufacturers' Representative  
Candy and Specialty Items  
4111 E. 4th St.  
TUCSON, ARIZONA  
Territory: Arizona, New Mexico  
& El Paso, Texas

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COMPANY**  
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Personal service to 183 jobbers,  
super-markets and department  
stores. Backed by 26 years ex-  
perience in the confectionery field.  
We call on every account person-  
ally every six weeks. Candy is  
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Manufacturers' Representative  
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Terr.: New Mexico, Arizona & El  
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LOS ANGELES 13, CALIF.  
1726 W. 60th St.,  
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3014 N.E. 32nd Ave.,  
PORTLAND, ORE.  
Terr.: 11 W. States & Hawaii

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Established 1906  
Sell Wholesale Trade Only  
Terr.: Eleven Western States

**RALPH W. UNGER &  
RICHARD H. BROWN**  
923 East 3rd St.  
Phone: MU. 4495  
LOS ANGELES 13, CALIFORNIA  
Terr.: Calif., Ariz., N. Mex.,  
West Texas & Nevada

Slowly dissolve the yellow sugar. Add white sugar, corn syrup and cream. Bring to boil and add cream of tartar. Cook to 250 degrees and add the raw almonds. Cook to 300 degrees Fahr. Set kettle off of furnace. Add the gelatine which has been soaked in a small amount of water (1 oz. water for the large batch or ½ oz. of water for the small batch). Stir until gelatine is dissolved and well mixed into the batch. Add the flavors which have been combined in measuring glass. Add the soda and stir until batch is well puffed up. Pour onto slab containing the ground pecans. Quickly spread the batch as thin as possible. Cover top of batch with ground pecans. Imbed nuts into the top surface of the brittle with a rolling pin. Cut batch into 2 or 3 pieces. As soon as the batch is firm enough to handle, remove from slab and shake off surplus nuts. Break into uneven pieces and store in well covered containers until ready to be sold.

**REMARKS.** This formula produces one of the finest nut candies with an unusual flavor and and excellent crunchy texture.

The brittle can also be coated with milk chocolate by pouring the batch on an oiled slab. Spread batch and cut into pieces large enough to fit a stock box. When batch is cool spread milk chocolate on each side of the brittle and sprinkle with the chopped pecans.

## Formula # 314 ASSORTED NUT PATCHES

Small Batch	Ingredients	Large Batch
4 lbs.	Granulated sugar	12 lbs.
2 lbs.	Corn syrup	6 lbs.
10 ozs.	Light molasses	1 qt.
10 ozs.	Fresh dairy butter	2 lbs.
3¼ lbs.	Small raw almonds	10 lbs.
10 ozs.	Black walnuts	2 lbs.
10 ozs.	English walnut pieces	2 lbs.
Sufficient	Fine desiccated coconut	Sufficient
¾ oz.	Bicarbonate of soda	2¼ ozs.
1 oz.	Salt	3 ozs.
1½ pts.	Water	2¼ qts.

**PROCEDURE.** Place sugar, corn syrup and water in cooking kettle. Cook to 250 degrees and add the raw almonds. Cook until almonds begin to turn brown. Add molasses and butter. Cook until almonds are a golden brown color. Add black walnuts and English walnut pieces. Stir and set kettle off of the furnace. Add salt and soda. Stir until soda is mixed in the batch and the batch is well puffed up. Pour onto an oiled slab that has been well sprinkled with the fine coconut. Spread the batch as thin as possible. Cut into 1½ inch squares with a roller cutter knife. Break marked pieces apart. Coat one half of the pieces in dark or milk chocolate. Pack alternate coated and uncoated pieces (coconut side up) into boxes to form a checker board effect.

**REMARKS.** These nut patches have a very attractive appearance and a fine eating quality.

## Formula # 315 WALNUT BUTTER CRISP

Small Batch	Ingredients	Large Batch
5 lbs.	Granulated sugar	10 lbs.
2½ lbs.	Corn syrup	5 lbs.
1½ lbs.	Fresh dairy butter	3 lbs.
7½ lbs.	English walnut pieces	15 lbs.
1 qt.	Water	2 qts.

**PROCEDURE.** Place sugar, corn syrup and water in cooking kettle. Cook to 300 degrees Fahr. Add walnuts and when nuts are well mixed into the batch pour onto oiled cooling slab. Spread as thin as possible but do not roll down the top surface of the batch. Cut into pieces large enough to fit into stock boxes. Pack in wax paper lined stock boxes and break into uneven pieces with a candy hatchet when the candy is sold.

**REMARKS.** This formula produces a fine flavored, crispy nut candy. Roasted cashew nuts, pecans, a combination of black walnuts and English walnuts can be used instead of the full amount of walnuts to produce a varied line of Butter Crisp Nut Candies.

(To be Continued)



# The MANUFACTURING CONFECTIONER'S *Clearing House*



## MACHINERY FOR SALE

### FOR SALE

Model S #3 Savage Fire Mixers.  
Model K #3 Savage Fire Mixers.  
50 gal. Model F-6 Savage Tilting Mixers.  
200 lb. Savage Flat Top Marshmallow Beaters.  
Merrow Cut-Rol Cream Center Maker.  
50" two cylinder Werner Cream Beater.  
1000 lb. Warner Syrup Cooler.  
200 lb. to 2000 lb. Chocolate Melters.  
Simplex Gas Vacuum Cooker.  
Simplex Steam Vacuum Cooker.  
600 lb. Continuous Vacuum Cooker.  
Form 6 and Form 3 Hildreth Pullers.  
6" and 7" York Batch Rollers.  
National Model AB Mogul with late type depositor.  
We guarantee completely rebuilt.  
**SAVAGE BROS. CO.**  
2636 Gladys Ave. Chicago 12, Ill.

**FOR SALE:** Complete Marshmallow mfg. equipment. Box 145, **THE MANUFACTURING CONFECTIONER.**

**POST WAR CREAM MACHINE** with large cooking dome, 1 RCA metal detector model MD, 120 Quart Glenn Beater, Box 741, **THE MANUFACTURING CONFECTIONER.**

**NUT ROLL MACHINER** with caramel coater Simplex Gas Fire cooker with 2 kettles, instant fondant machiner, Wrapade Pop Wrapper, Box 742, **THE MANUFACTURING CONFECTIONER.**

**SIMPLEX STEAM VACUUM COOKER** with high dome, 2 Lynch wrappers with roll card feed, 2 D. F.'s for nut rolls, 40" Enrober line with 80' economy tunnel, 180" turn tables, 40' Packing table. Box 743, **THE MANUFACTURING CONFECTIONER.**

**1 MILL RIVER** all steel Mogul in use practically 2 years complete with Mill River depositor and pump bar; 1 National Equipment wood Mogul, old model, but runs plenty good; 10,000 starch trays to fit either machine; 1 Six-bag Peanut Roaster practically new; 1 Ideal Carmel Wrapper; 2 Drop Frames, 4 x 7 with one set of rollers; and many other items of small tools. Please write for full information Box 614, **THE MANUFACTURING CONFECTIONER.**

**SIMPLEX GAS VACUUM COOKER** complete with spare pump, gaskets, and glasses, 3 kettles (extra deep and with special handles). Two Hydraulic Dollies for one man operation of above units. In excellent used condition. **SEVIGNY'S CANDY, INC.,** West Hanover, Massachusetts. Phone: R0ckland 1909.

**FOR SALE:** Used Candy Equipment: Beaters, Kettles, Stoves, Cooling Slabs, Wrapping Machines, Starch Molding Equipment, Enrobers, Chocolate Melters, Starch Boards, etc. **S. Z. CANDY MACHINERY CO.,** 1140 N. AMERICAN ST., PHILA. 23, PENNA.

## MACHINERY FOR SALE

**1 LATINI DIE POP MACHINE;** 2 Racine Die Pop Machines; 1 Wrap-Ade Pop Mixer; 2 Savage & Dubin Gas Fire Mixers; 1 2-bag Lambert Peanut Roaster with cooling truck & blower; 6" After-Dinner Mint Machine with triple cooling conveyor; 6 38" copper Revolving Pans, some with steam coils; 4 steel Cooling Slabs. All equipment in good working order. Located on West Coast. Box 747, **THE MANUFACTURING CONFECTIONER.**

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A nationally known, rapidly expanding confectionery concern with many retail outlets in the New York Metropolitan area, and other major cities, seeks a first class mechanic with thorough knowledge of the technical aspects of candy manufacturing.

Must be fully experienced in all candy machinery, especially all types of chocolate and cream depositors, hard candy machines, kettles, wrapping machines, Enrobers, refrigeration, etc.

Excellent position with good future awaits right man. Write in detail stating experience, age and salary desired. All answers will be kept in strictest confidence.

Box 750, **THE MANUFACTURING CONFECTIONER**

### FRANK PETROVIC Consultant

I have had many years experience in candy factories of all sizes, in the development of new candies, both low priced for the wholesale trade and high priced for the retail trade. I have helped engineer special equipment for the manufacturing of unusual candies, and in placing equipment for maximum efficiency. I have also had a great deal of experience with all types of chocolate and summer coatings, and can help in setting up a coating handling and tempering system. I will travel to any place where my experience can be of service.

5955 W. Dakin St., Chicago 34, Illinois, Telephone, Spring 7-2961

**ALL AROUND RETAIL CANDY MAKER** would like position on or around September 1. Box 749, **THE MANUFACTURING CONFECTIONER.**

## POSITIONS WANTED

**CANDY EXECUTIVE:** Plant manager of leading candy manufacturer for several years. Experienced in all plant operations plus purchasing, production and distribution. Proven ability to assume full responsibility of plant operations. Box 542, **THE MANUFACTURING CONFECTIONER.**

**CANDY FOOD TECHNOLOGIST,** with wide experience in the development, production and technical control of a complete line of confectionery and chocolate products, as well as numerous other foods, desires a position of responsibility in which he can fully use his ability. Box 751, **THE MANUFACTURING CONFECTIONER.**

**FOREMAN IN GENERAL PAN LINE** including Bubble Chewing gum bass and regular gum bass, looking for better position. I will also teach how to make gum bass in the United States and also foreign countries. Box 938, **THE MANUFACTURING CONFECTIONER.**

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**CANDY EXECUTIVE**—Partnership or purchase. Located in Florida: Established plant selling better trade. Candy and glazed fruit manufacturing. Items suitable for national distribution. Present owner young and aggressive and has built a good business in short time. Needs financial and executive help preferably in sales capacity. About \$35,000 required for partnership. Box 746, **THE MANUFACTURING CONFECTIONER.**

## HELP WANTED

**EXPERT CANDY MAKER** required by Latin-American manufacturer of a large variety of hard candies from cane sugar. Applicant must be able to speak Spanish. In first letter please supply information as to education, experience, age and marital status. All inquiries will be held in strict confidence. Box 752, The MANUFACTURING CONFECTIONER.

**REPRESENTATIVE WANTED** to handle line of starch trays on commission basis. Box 243, The MANUFACTURING CONFECTIONER.

**CANDY MACHINERY SALESMAN WANTED:** Knowledge of production and some familiarity with industry desirable. Some traveling. Give background and experience in strictest confidence. Box 147, The MANUFACTURING CONFECTIONER.

**IDEA MAN:** for creative work applying to all divisions of the candy manufacturing business — sales included. Limited engagements accepted. Box 744, The MANUFACTURING CONFECTIONER.

**ASSISTANT CANDY SUPERINTENDENT** experienced in handling employees, making and packaging of a general line of all grades and kinds of candy. Production experience should include packaged chocolates, hard candies and hand rolls. Plant located in the East. Box 745, The MANUFACTURING CONFECTIONER.

**CLASSIFIED ADVERTISING** is designed to aid the candy man in finding a market for or source of used equipment, services and miscellaneous items. In replying to ads address: Box Number, The Manufacturing Confectioner, 418 N. Austin Blvd., Oak Park, Illinois.

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Advertisements of suppliers are a vital part of the industrial publication's service to its readers. The following firms are serving the readers of The MANUFACTURING CONFECTIONER by placing their advertisements on its pages. The messages of these suppliers are certainly a part of the literature of the industry.

Advertising space in The MANUFACTURING CONFECTIONER is available only to firms supplying equipment, materials, and services for the use of confectionery manufacturers. Advertising of finished confectionery products is not accepted.

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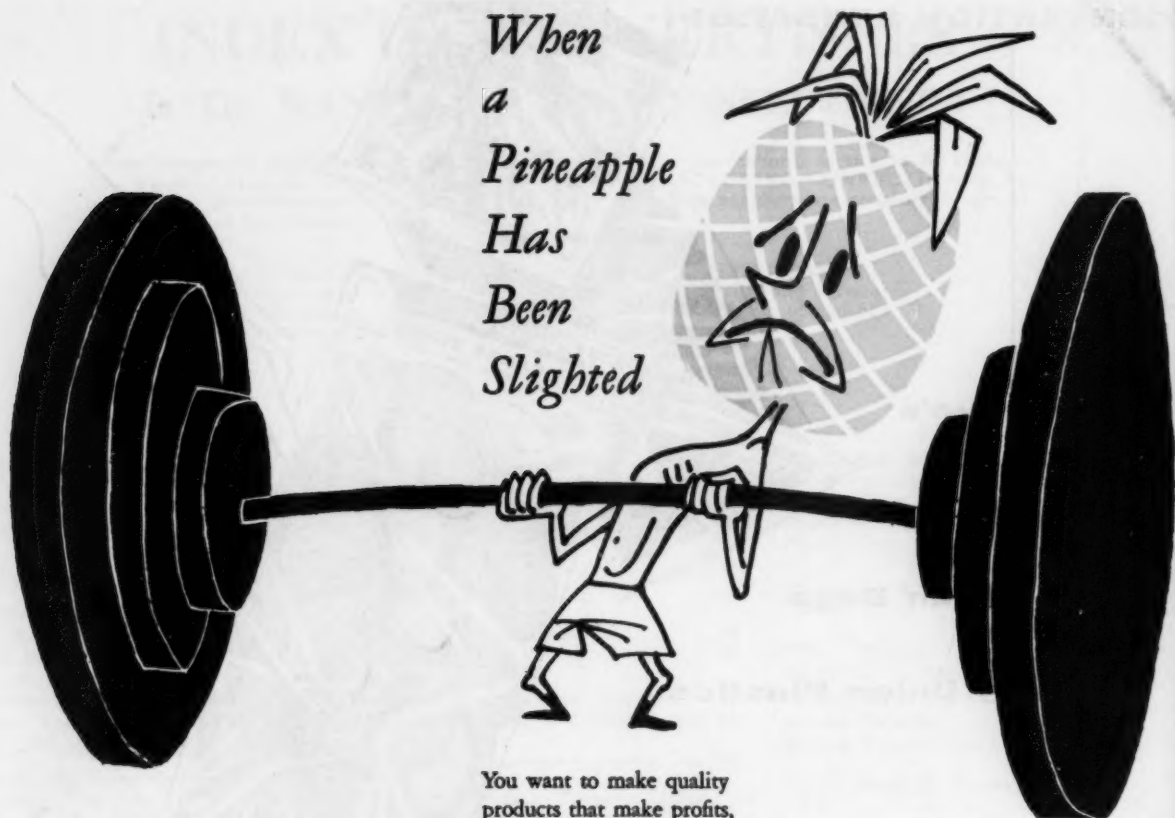
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